A publication of the National Wildfire Coordinating Group



Prescribed Fire Plan

PMS 484-1 JULY 2017

Prescribed Fire Plan

July 2017 PMS 484-1

The *Prescribed Fire Plan* is supplemental to the *Interagency Prescribed Fire Planning and Implementation Guide*, PMS 484. The plan is the site-specific legal implementation document that provides the agency administrator the information needed to approve the prescribed fire plan, and the prescribed fire burn boss the information needed to implement the prescribed fire plan.

The *Interagency Prescribed Fire Planning and Implementation Procedures Guide*, PMS 484, establishes national interagency standards for the planning and implementation of prescribed fire. The guide is located at: https://www.nwcg.gov/publications/484.

PRESCRIBED FIRE PLAN

| ADMINISTRATIVE UNIT NAME(S): Fosset Gulch EA | |
|---|-------|
| PRESCRIBED FIRE NAME: Prescribed Fire Unit (Ignition Unit): Yellow Jacket Units 1 and 2 | |
| PREPARED BY: Name (print): Hon Schlapfer Qualification/Currency: YES | |
| Signature: | Date: |
| TECHNICAL REVIEW BY: Name (print): Qualification/Currency:_ Signature: | |
| COMPLEXITY RATING: Moderate | |
| MINIMUM BURN BOSS QUALIFICATION: RXB2 | |
| APPROVED BY: Name – Agency Administrator (print): | |
| Signature – Agency Administrator: 1 | Date: |

Element 2A: Agency Administrator Ignition Authorization

Instructions: The Agency Administrator Ignition Authorization must be completed before a prescribed fire can be implemented. If ignition of the prescribed fire is not initiated prior to expiration date determined by the agency administrator, a new authorization will be required.

Prior to signature the agency administrator should discuss the following key items with the fire management officer (FMO) or burn boss. Attach any additional instructions or discussion documentation (optional) to this document.

Key Discussion Items

| A. | Has anything changed since the Prescribed Fire Plan was approved or revalidated? |
|-------------|---|
| | Such as drought or other climate indicators of increased risk, insect activity, new |
| | subdivisions/structures, smoke requirements, Complexity Analysis Rating. |
| В. | Have compliance requirements and pre-burn considerations been completed? |
| | Such as preparation work, NEPA mitigation requirements, cultural, threatened and endangered species, smoke permits, state burn permits/authorizations. |
| C. | Can all of the elements and conditions specified in Prescribed Fire Plan be met? |
| | Such as weather, scheduling, smoke management conditions, suitable prescription window, correct season, staffing and organization, safety considerations, etc. |
| D. | Are processes in place to ensure all internal and external notifications and media releases will be completed? |
| E. | Have key agency staffs been fully briefed about the implementation of this prescribed fire? |
| F. | Are there circumstances that could affect the successful implementation of the plan? |
| | Such as preparedness level restrictions, resource availability, other prescribed fire or wildfire activity |
| G. | Have you communicated your expectations to the Burn Boss and FMO regarding if and when you are |
| | to be notified that contingency actions are being taken? |
| H. | Have you communicated your expectations to the Burn Boss and FMO regarding decisions to declare |
| | the prescribed fire a wildfire? |
| Imi | plementation Recommended by: |
| _ | O or Prescribed Fire Burn Boss Signature:Date: |
| exp atta | n authorizing ignition of this prescribed fire between the dates of and It is my ectation that the project will be implemented within this time frame and as discussed and documented and ched to this plan. If the conditions we discussed change during this time frame, it is my expectation you will be me on the circumstances and an updated authorization will be negotiated if necessary. |
| Ado | ditional Instructions or Discussion Documentation attached (Optional): Yes \square No \square |
| Ign | ition Authorized by: |
| Āg | ency Administrator Signature and Title: Date: |

Element 2B: Prescribed Fire Go/No-Go Checklist

| Preliminary Questions | Circle YES | or NO | | | | |
|---|------------|---------|--|--|--|--|
| A. Have conditions in or adjacent to the ignition unit changed, (for example: drought conditions or fuel loadings), which were not considered in the prescription development? If NO proceed with the Go/NO-GO Checklist below, if YES go to item B. | YES | NO | | | | |
| B. Has the prescribed fire plan been reviewed and an amendment been approved; or has it been determined that no amendment is necessary? If <u>YES</u>, proceed with checklist below. If <u>NO</u>, STOP: Implementation is not allowed. An amendment is needed. | YES | NO | | | | |
| GO/NO-GO Checklist | Circle YES | S or NO | | | | |
| Have ALL permits and clearances been obtained? | YES | NO | | | | |
| Have ALL the required notifications been made? | YES | NO | | | | |
| Have ALL the pre-burn considerations and preparation work identified in the prescribed fire plan been completed or addressed and checked? | YES | NO | | | | |
| Have ALL required current and projected fire weather forecast been obtained and are they favorable? | YES | NO | | | | |
| Are ALL prescription parameters met? | YES | NO | | | | |
| Are ALL smoke management specifications met? | YES | NO | | | | |
| Are ALL planned operations personnel and equipment on-site, available and operational? | YES | NO | | | | |
| Has the availability of contingency resources applicable to today's implementation been checked and are they available? | YES | NO | | | | |
| Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones? | | | | | | |
| If all the questions were answered " <u>YES</u> " proceed with a test fire. Document the current conditions, location and results. If any questions were answered " <u>NO</u> ", DO NOT proceed with the test fire: Implementation is not allowed. | | | | | | |
| After evaluating the test fire, in your judgment can the prescribed fire be carried out according to the prescribed fire plan and will it meet the planned objective? Circle: YES or NO | | | | | | |

| Burn Boss Signature: | Date: | |
|----------------------|-------|--|

Element 3: Complexity Analysis Summary and Final Complexity

Replace this page with the signed: Summary and Final Complexity Worksheet PMS 424-1

The worksheet is a separate file that needs to be copied and pasted from *Summary and Final Complexity Worksheet*, PMS 424-1. On the completed worksheet; highlight the entire worksheet area to be copied, right click, click on 'copy'. On this page, delete this text, right click, choose 'picture' as a paste option, and resize as necessary to fit to page.

An alternate solution is to print the *Summary and Final Complexity Worksheet*, 424-1, and insert into the final plan.

Management Summary

The Yellow Jacket Prescribed Fire project is located in La Plata and Archuleta County's, 6 miles north east of the Town of Bayfield. Previous treatment on this project included 1,423 acres implemented in 2006 and all 2,390 acres burned in 2015. The project consists of 2,390 acres located in the north end of the HD mountains, just south of HWY 160. The primary objective of this burn is to reduce the existing wildland fire hazard and reintroduce fire to increase the resistance and resiliency of the warm-dry mixed conifer and ponderosa pine forest types in this landscape thus reducing potential negative effects from future wildland fire to both agency and adjacent private lands while restoring fire-adaptive ecosystems

| COMPLEXITY RATING SUMMARY | | | | | | |
|----------------------------------|----------------|--|--|--|--|--|
| | OVERALL RATING | | | | | |
| RISK | MODERATE | | | | | |
| POTENTIAL CONSEQUENCES | MODERATE | | | | | |
| TECHNICAL DIFFICULTY | MODERATE | | | | | |
| SUMMARY COMPLEXITY DETERMINATION | MODERATE | | | | | |
| Rationala | • | | | | | |

This project rates as moderate complexity due to the variable terrain, aerial ignition component, and proximity to private land, infrastructure, and the Town of Bayfield. Fuels include gambel oak, ponderosa pine, and mixed conifer on the north aspects. Sauls Creek prescribed fire implemented 2011 thru 2014 borders the west side of unit 1.Road access to units is limited ATV/UTV can access all parts of all units. The risk of escape is moderate; however the potential consequences are high. Many of the burn units are adjacent to private land and there are many residences in close proximity to the burn units. This risk will be mitigated by having sufficient qualified resources on scene, careful monitoring of weather, fire behavior and fuels conditions and coordination between firing and holding crews.

Element 4: Description of Prescribed Fire Area

B. Vegetation/Fuels Description

| On-Site Fuels Data | | | | Adjacent Fuels Data | | | | |
|--------------------|---------------------|-----|---|--|-----|--|--|--|
| FE | BPS Fuel Model(s) | TL8 | TU5 | FBPS Fuel Model(s) | TL5 | | | |
| NF | DRS Fuel Model(s) | С | Н | NFDRS Fuel Model(s) | F | | | |
| | Fire Regime(s) | 1 | 2 | Fire Regime(s) | 4 | | | |
| Fire | Condition Class(es) | 3 | 2 | Fire Condition Class(es) | 2 | | | |
| Percent of Area | | 40 | 10 | Percent of Area | 50 | | | |
| | 1 hour tlf | | | General Description of Adjacent Fue | | | | |
| | 10 hour tlf | | | In the lower elevations there is a mixed brush component on no aspects and in drainage bottoms. A few sagebrush-dominated | | | | |
| 50 | 100 hour tlf | | | openings are present, but they are limited in size and number. Mid elevation vegetation is ponderosa pine with a brush understory. The brush is mainly gamble oak but also includes a mix of service berry, mountain mahogany and choke cherry. | | | | |
| Fuel Loading | 1000 hour tlf | | | | | | | |
| Loa | Litter depth | | | | | | | |
| uel | Duff depth | | | Higher elevations include ponderosa pine with a mosaic of mixed brush in the understory. Douglas fir and white fir can be found on | | | | |
| | Live woody | | the north facing slopes. Pockets of aspen (1/10 th acre to 3 acre in size) are scattered throughout. | | | | | |
| Live herbaceous | | | | size) are seattered timoughout. | | | | |
| Total fuel loading | | | | | | | | |

Comments

The Predominant vegetation for all burn units consists of approximately 60% Gambel oak, 35% ponderosa pine, and 5% mixed conifer on high elevation north facing slopes. The fuel complexes are fairly homogenous with a small "intermix" zone thru the transition. The ponderosa pine is predominantly on the south facing aspects at the lower elevations, the gamble oak is interspersed from the pine type transitioning to "pure" oak stands. The mixed conifer fuel complex is found on only a few of the higher ridges and only on the northern aspects. There are numerous patches of bare rock and mineral soil on predominate ridgelines between the units. There are also large open meadows on the north ends of both units.

Burn Unit 1 is bordered to the south and west by the Sauls Creek Rx implemented in the fall of 2014. This unit has never been logged nor has it had any thinning or fuels reduction treatments due to lack of access. Various small fires have occurred ranging in size from 0.1 to 5.0 acres. Grazing has occurred in this unit and many lager open grassy meadows exist on the north end of the unit.

Burn Unit 2 has similar fuel conditions as described above and will be a 4^{th} entry burn with previous treatments in 1989, 1990, and 1996.

C. Description of Unique Features

- Powerlines (KV) border the burn units1 and 2 to the North and West.
- Numerous gas wells Border units 1 and 2 to the North, East, and West.
- Wooden fences bordering private property North, East, and West sides of burn units.
- Highway 160 runs along the North and East side of the entire project area.

| D. Maps - Attac | h in Appendix A |
|-----------------|-----------------|
|-----------------|-----------------|

| 1. | Vicinity (Required) |
|----|---|
| 2. | Project/Ignition Unit(s) (Required) |
| 3. | Values: (Required) |
| 4. | Significant or Sensitive Features (Optional): \square Included \boxtimes Not Included |
| 5. | Fuels or Fuel Model(s)(Optional): \Box Included \Box X Not Included |
| 6. | Smoke Impact Area (Optional): ☐ Included ⊠ Not Included |

Element 5: Objectives

1. Resource Objectives

Increase the probability of natural ponderosa pine regeneration by the release natural minerals and nutrients back into the soil. Additional benefits would include an increase in habitat diversity for many native wildlife species, including big game, through the regeneration of gamble oak.

- Top kill 30 to 80% of the Gambel oak stems less than 6 inches.
- Raise average canopy base height 5 to 10 feet in the Ponderosa-mixed conifer stands.
- Improve habitat for big game winter range and management indicator species associated with ponderosa pine ecosystems.

2. Prescribed Fire Objectives

Lower the probability of a running stand-replacing crown fire, thus secondarily reducing the risk to life and property, and natural resources, and decreasing financial cost of Wildfire.

Reduce surface fuels by the following amounts:

- 1 hour fuels (less than 0.25" dia.) 30 to 70%
- 10 hour fuels (0.25 to 1.0" dia.) 30 to 70%
- 100 hour fuels (1.0 to 3.0" dia.) 10 to 50%

Element 6: Funding

| Funding Source(s) NFHF13 | | | | | | | | |
|--------------------------|-------|----------|-------|------------|--------|-------|----------|--|
| Phase | Fuels | Wildlife | Range | Recreation | Timber | Other | Subtotal | |
| Planning & | | | | | | | | |
| Clearances | | | | | | | | |
| Burn Plan | | | | | | | | |
| Preparation | | | | | | | | |
| Site & Line | | | | | | | | |
| Preparation | | | | | | | | |
| Ignition & | | | | | | | | |
| Holding | | | | | | | | |
| Mop-up | | | | | | | | |
| & Patrol | | | | | | | | |
| Subtotal | | | | | | | | |
| Grand Total | | | | | | | | |

A. Environmental Prescription:

The BehavePlus 5.0.5 model was used to determine prescription parameters. All fuel models were run to reflect both high end optimal, and low end parameters of the prescription. The prescribed fire project area is divided between fuel models TU5, TL5, and TL8.

| Fuel Models: | Low Fire Intensity | High Fire Intensity |
|---|-----------------------|------------------------------------|
| Temperature | 35 | 85 |
| Relative Humidity (%) | 45 | 10 |
| Mid Flame wind speed(mph)* | .6 | 6.6 TL5, TL8 8.8 TU5 |
| 20 ft. Wind Speed(mph) | 2 | 22 |
| 1-hr fuel moisture (%) | 14 | 5 |
| 10-hr fuel moisture (%) | 16 | 6 |
| 100-hr fuel moisture (%) | 18 | 8 |
| 1000-hr fuel moisture (%) | NA | NA |
| Live herbaceous moisture (%) | 150 | 80 |
| Live woody moisture (%) | 150 | 100 |
| Wind Direction | E,W,S | E,W,S |
| Smoke Dispersion** (minimum ventilation) | Fair | Fair |

^{*} Wind adjustment factor of .3 for Fuel Models - TL5, TL8

^{*} Wind adjustment factor of .4 for Fuels Model - TU5

^{**} Dispersion index may be "Fair" if waiver is in place.

Fuel Model TL5 High Load Conifer Litter

| ingii zoda doimei zittei | | | | | | | | | | |
|---|-----------|---------------|-----------|-------------------------------|-----------|---------|----------|--|--|--|
| PRESCRIBED WEATHER CONDITIONS | | | | | | | | | | |
| VARIABLE | LOW | OPTIMAL | HIGH | VARIABLE LOW OPTIMAL HIG | | | | | | |
| Temperature | 35 | 70 | 85 | Mid Flame Wind Speed | 1 | 4 | 6.6 | | | |
| Relative Humidity | 45 | 20 | 10 | 20' Wind Speed | 4 | 12 | 22 | | | |
| Fine Dead FM | 14 | 8 | 5 | 20' Gust Limit | 40 | 35 | 30 | | | |
| Smoke Vector (Win | d Dir)-So | outh, East, V | Vest | Wind Adjustment Factor (W | /AF): .3 | | | | | |
| Smoke Avoidance (Wind Dir)- See Attached smoke permit WAF Rational3 Chosen due to canopy structure and past experiences burning in this fuel type. | | | | | | | and | | | |
| | | PRESCRIB | ED MOIS | STURE CONTENT OF FUELS | | | | | | |
| SIZE CLASS /TYPE | LOW | OPTIMAL | HIGH | SIZE CLASS/TYPE | LOW | OPTIMAL | HIGH | | | |
| 1 Hour Dead | 14 | 8 | 5 | Live Woody | 150 | 125 | 80 | | | |
| 10 Hour Dead | 16 | 8 | 6 | Live Herbaceous | 150 | 125 | 100 | | | |
| 100 Hour Dead | 18 | 10 | 8 | Upper Duff | n/a | n/a | n/a | | | |
| 1000 Hour Dead | n/a | n/a | n/a | Lower Duff | n/a | n/a | n/a | | | |
| | | | | TION AND FIRE BEHAVIOR | | | | | | |
| Time of Ignition | | | • | ay, June-August, September, | | | <u> </u> | | | |
| Ignition Method | | | | ack Line – Aerial ping pong o | r Helitoi | rch | | | | |
| Acceptable Firing | | Strip He | ad, Flanl | king, Backing, Spot Ignition | | | | | | |
| Techniques/pattern | | | | | | | | | | |
| Fire Behavior Fuel Model Selection Rational:TL5 Primary carrier of fire in TL5 is high load conifer litter; light slash or mortality fuel Fire Behavior Parameters: Flame lengths between 1 to 6 feet. Rates of spread 1 to 11 chains/hr. | | | | | | | read 1 | | | |
| | LOW | OPTIMAL | HIGH | | LOW | OPTIMAL | HIGH | | | |
| Snot Dictors | .2 | .4 | .6 | Prob. of Ignition | 15 | 60 | 75 | | | |
| Spot Distance- Miles | | | | • | | | | | | |
| Flame Length- | 0-1 | 1-2 | 2-5 | 2-5 Rate of Spread- 0-2 2-7 | | | 7-11 | | | |

Flame lengths will vary during the firing operation and may for short periods of time approach upper prescription parameters dependent upon firing techniques, weather conditions, fuel jackpots and topography. The firing boss will need to alter the firing techniques to maintain prescription parameters and may have to stop ignition operations until more favorable conditions exist.

Chains/HR

Wind gust will increase Rate of spread to 11.3 chains per hour and Flame length to 3.3 feet Wind Gust Definition- NWS

Is a sudden, brief increase in speed of the wind. According to U.S. weather observing practice, gusts are reported when the peak wind speed reaches at least 16 knots and the variation in wind speed between the peaks and lulls is at least 9 knots. The duration of a gust is usually less than 20 seconds.

Fuel Model TL5

FIRE BEHAVIOR MATRIX (Flame Length)

BehavePlus 5.0.5 model was used to determine outputs

| 1-HOUR | 20' Wind Speed/Mid Flame MPH (calculated with prescription WAF) | | | | | | | | | |
|----------|---|---------|---------|---------|---------|---------|---------|---------|--|--|
| FUEL | 20ft- 0-3 | 4-6 | 7-9 | 10-12 | 13-15 | 16-18 | 19-21 | 22-25 | | |
| MOISTURE | MFWS-0-1 | 1.0-2.0 | 2.0-3.0 | 3.0-4.0 | 4.0-4.5 | 4.5-5.5 | 5.5-6.5 | 6.5-7.5 | | |
| 5 | 1.8 | 1.9 | 2.1 | 2.3 | 2.5 | 2.7 | 2.9 | 3.1 | | |
| 6 | 1.7 | 1.8 | 2.0 | 2.2 | 2.4 | 2.6 | 2.7 | 3.0 | | |
| 7 | 1.6 | 1.7 | 1.9 | 2.1 | 2.3 | 2.4 | 2.6 | 2.8 | | |
| 8 | 1.5 | 1.7 | 1.8 | 2.0 | 2.2 | 2.3 | 2.5 | 2.7 | | |
| 9 | 1.5 | 1.6 | 1.8 | 1.9 | 2.1 | 2.3 | 2.4 | 2.6 | | |
| 10 | 1.4 | 1.6 | 1.7 | 1.7 | 2.0 | 2.2 | 2.4 | 2.6 | | |
| 11 | 1.4 | 1.5 | 1.7 | 1.8 | 2.0 | 2.1 | 2.3 | 2.5 | | |
| 12 | 1.4 | 1.5 | 1.6 | 1.8 | 2.0 | 2.1 | 2.3 | 2.4 | | |
| 13 | 1.3 | 1.5 | 1.6 | 1.8 | 1.9 | 2.1 | 2.2 | 2.4 | | |
| 14 | 1.3 | 1.4 | 1.6 | 1.7 | 1.9 | 2.0 | 2.2 | 2.4 | | |
| 15 | 1.3 | 1.4 | 1.6 | 1.7 | 1.8 | 2.0 | 2.1 | 2.3 | | |
| 16 | 1.3 | 1.4 | 1.5 | 1.7 | 1.8 | 1.9 | 2.1 | 2.3 | | |
| 17 | 1.2 | 1.3 | 1.5 | 1.6 | 1.7 | 1.9 | 2.0 | 2.2 | | |

FIRE BEHAVIOR MATRIX (Rate of Spread)

BehavePlus 5.0.5 model was used to determine outputs

| 1-HOUR | | 20' Wii | nd Speed/Mid | d Flame MPH | calculated wi | th prescriptio | n WAF) | |
|----------|-----------|---------|--------------|-------------|---------------|----------------|---------|---------|
| FUEL | 20ft- 0-3 | 4-6 | 7-9 | 10-12 | 13-15 | 16-18 | 19-21 | 22-25 |
| MOISTURE | MFWS-0-1 | 1.0-2.0 | 2.0-3.0 | 3.0-4.0 | 4.0-4.5 | 4.5-5.5 | 5.5-6.5 | 6.5-7.5 |
| 5 | 2.9 | 3.6 | 4.4 | 5.3 | 6.3 | 7.4 | 8.6 | 10.3 |
| 6 | 2.7 | 3.3 | 4.0 | 4.9 | 5.8 | 6.9 | 8.0 | 9.5 |
| 7 | 2.5 | 3.1 | 3.8 | 4.6 | 5.4 | 6.4 | 7.4 | 8.9 |
| 8 | 2.4 | 2.9 | 3.5 | 4.3 | 5.1 | 6.0 | 7.0 | 8.4 |
| 9 | 2.2 | 2.7 | 3.4 | 4.1 | 4.9 | 5.7 | 6.6 | 7.9 |
| 10 | 2.1 | 2.6 | 3.2 | 3.9 | 4.6 | 5.5 | 6.3 | 7.6 |
| 11 | 2.1 | 2.5 | 3.1 | 3.7 | 4.5 | 5.2 | 6.1 | 7.3 |
| 12 | 2.0 | 2.4 | 3.0 | 3.6 | 4.3 | 5.1 | 5.9 | 7.0 |
| 13 | 1.9 | 2.3 | 2.9 | 3.5 | 4.1 | 4.9 | 5.7 | 6.8 |
| 14 | 1.8 | 2.3 | 2.8 | 3.4 | 4.0 | 4.7 | 5.5 | 6.5 |
| 15 | 1.8 | 2.2 | 2.7 | 3.2 | 3.9 | 4.5 | 5.3 | 6.3 |
| 16 | 1.7 | 2.1 | 2.6 | 3.1 | 3.7 | 4.4 | 5.1 | 6.1 |
| 17 | 1.6 | 2.0 | 2.5 | 3.0 | 3.6 | 4.2 | 4.9 | 5.8 |

Fuel Model TL8

Ponerosa Pine-Long Needle Litter

| | | PRESC | RIBED W | VEATHER CONDITIONS | | | |
|--|-----------|---------------|--------------|--|-----------|----------------|--------|
| VARIABLE | LOW | OPTIMAL | HIGH | VARIABLE | LOW | OPTIMAL | HIGH |
| Temperature | 35 | 70 | 85 | Mid Flame Wind Speed | 1.6 | 4.8 | 6.6 |
| Relative Humidity | 45 | 20 | 15 | 20' Wind Speed | 4 | 12 | 22 |
| Fine Dead FM | 14 | 7 | 5 | 20' Gust Limit | 40 | 35 | 30 |
| Smoke Vector (Win | d Dir)- S | outh, East, \ | N est | Wind Adjustment Factor (W | /AF): .3 | | |
| Smoke Avoidance (smoke permit | Wind Di | r)- See Attac | ched | WAF Rational3 Chosen due past experiences burning in the | | 1 0 | and |
| | | PRESCRIB | ED MOIS | STURE CONTENT OF FUELS | | | |
| SIZE CLASS /TYPE | LOW | OPTIMAL | HIGH | SIZE CLASS/TYPE | LOW | OPTIMAL | HIGH |
| 1 Hour Dead | 14 | 7 | 5 | Live Woody | 150 | 125 | 90 |
| 10 Hour Dead | 16 | 8 | 6 | Live Herbaceous | 150 | 125 | 90 |
| 100 Hour Dead | 18 | 10 | 8 | Upper Duff | n/a | n/a | n/a |
| 1000 Hour Dead | n/a | n/a | n/a | Lower Duff | n/a | n/a | n/a |
| | | | | TION AND FIRE BEHAVIOR | | | |
| Time of Ignition | | | _ | ay, June-August, September, | | | • |
| Ignition Method | | | | ack Line – Aerial ping pong o | r Helitor | rch | |
| Acceptable Firing | | Strip He | ad, Flani | king, Backing, Spot Ignition | | | |
| Techniques/patterr | | 1 | | I stor Balanta Barana | | | |
| Fire Behavior Fuel N Primary carrier of fi | | | | Fire Behavior Parametor Flame lengths between 1 to 13 chains/hr. | | t. Rates of sp | read 1 |
| long-needle pine lit | | | | | | | |
| of herbaceous load | ter, may | iliciade sili | an annou | | | | |
| of fici baccous load | | | | | | | |
| | LOW | OPTIMAL | HIGH | | LOW | OPTIMAL | HIGH |
| Spot Distance- Miles | .2 | .4 | .6 | Prob. of Ignition | 15 | 60 | 75 |
| Flame Length- Feet | 0-2 | 2-4 | 4-5 | Rate of Spread- Chains/HR | 0-3 | 3-7 | 7-13 |

Flame lengths will vary during the firing operation and may for short periods of time approach upper prescription parameters dependent upon firing techniques, weather conditions, fuel jackpots and topography. The firing boss will need to alter the firing techniques to maintain prescription parameters and may have to stop ignition operations until more favorable conditions exist.

Wind gust will increase Rate of spread to 15.4 chains per hour and flame length to 5.3 feet Wind Gust Definition- NWS

Is a sudden, brief increase in speed of the wind. According to U.S. weather observing practice, gusts are reported when the peak wind speed reaches at least 16 knots and the variation in wind speed between the peaks and lulls is at least 9 knots. The duration of a gust is usually less than 20 seconds.

FIRE BEHAVIOR DECISION MATRIX (Rate of Spread) Fuel Model TL8

| | | 20′ ۱ | Nind | Spe | ed/N | ∕lid F | lame | MP | Н (са | lcula | ited | with | pres | cript | ion \ | NAF) |) | | | | | | | | | |
|----------|----|-------|------|-----|------|--------|-------|------|-------|-------|-------|------|------|--------|-------|------|--------|-------|--------|------|------|------|------|------|------|------|
| Fine | | | | | | 2 | 20' W | /ind | Spee | d/M | id Fl | ame | MPH | l (cal | culat | ed v | vith p | oresc | riptio | on W | AF) | | | | | |
| | % | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| Dead | 3 | 1.7 | 1.9 | 2.1 | 2.5 | 2.8 | 3.2 | 3.6 | 4 | 4.5 | 4.9 | 5.4 | 6 | 6.5 | 7 | 7.6 | 8.2 | 8.8 | 9.4 | 10.1 | 10.7 | 11.4 | 12.1 | 12.8 | 13.5 | 14.2 |
| T | 4 | 1.5 | 1.7 | 1.9 | 2.2 | 2.5 | 2.9 | 3.2 | 3.6 | 4 | 4.5 | 4.9 | 5.4 | 5.9 | 6.4 | 6.9 | 7.4 | 8 | 8.6 | 9.1 | 9.7 | 10.3 | 10.9 | 11.6 | 12.2 | 12.9 |
| uel | 5 | 1.4 | 1.6 | 1.8 | 2 | 2.3 | 2.6 | 3 | 3.3 | 3.7 | 4.1 | 4.5 | 4.9 | 5.4 | 5.8 | 6.3 | 6.8 | 7.3 | 7.8 | 8.3 | 8.9 | 9.4 | 10 | 10.6 | 11.1 | 11.7 |
| S | 6 | 1.3 | 1.4 | 1.6 | 1.9 | 2.1 | 2.4 | 2.7 | 3 | 3.4 | 3.8 | 4.1 | 4.5 | 4.9 | 5.4 | 5.8 | 6.2 | 6.7 | 7.2 | 7.7 | 8.1 | 8.7 | 9.2 | 9.7 | 10.2 | 10.8 |
| Moistu | 7 | 1.2 | 1.3 | 1.5 | 1.7 | 2 | 2.2 | 2.5 | 2.8 | 3.1 | 3.5 | 3.8 | 4.2 | 4.6 | 5 | 5.4 | 5.8 | 6.2 | 6.6 | 7.1 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 |
| ਜ | 8 | 1.1 | 1.2 | 1.4 | 1.6 | 1.8 | 2.1 | 2.3 | 2.6 | 2.9 | 3.2 | 3.6 | 3.9 | 4.2 | 4.6 | 5 | 5.4 | 5.8 | 6.2 | 6.6 | 7 | 7.4 | 7.9 | 8.3 | 8.8 | 9.3 |
| | 9 | 1 | 1.2 | 1.3 | 1.5 | 1.7 | 1.9 | 2.2 | 2.5 | 2.7 | 3 | 3.3 | 3.6 | 4 | 4.3 | 4.7 | 5 | 5.4 | 5.8 | 6.2 | 6.6 | 7 | 7.4 | 7.8 | 8.2 | 8.7 |
| | 10 | 1 | 1.1 | 1.2 | 1.4 | 1.6 | 1.8 | 2.1 | 2.3 | 2.6 | 2.9 | 3.1 | 3.4 | 3.7 | 4.1 | 4.4 | 4.7 | 5.1 | 5.4 | 5.8 | 6.2 | 6.6 | 7 | 7.4 | 7.8 | 8.2 |
| | 11 | 0.9 | 1 | 1.2 | 1.3 | 1.5 | 1.7 | 2 | 2.2 | 2.4 | 2.7 | 3 | 3.3 | 3.6 | 3.9 | 4.2 | 4.5 | 4.8 | 5.2 | 5.5 | 5.9 | 6.2 | 6.6 | 7 | 7.4 | 7.8 |
| _ | 12 | 0.9 | 1 | 1.1 | 1.3 | 1.5 | 1.7 | 1.9 | 2.1 | 2.3 | 2.6 | 2.8 | 3.1 | 3.4 | 3.7 | 4 | 4.3 | 4.6 | 4.9 | 5.3 | 5.6 | 5.9 | 6.3 | 6.7 | 7 | 7.4 |
| _ | 13 | 0.8 | 0.9 | 1.1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 | 2.2 | 2.5 | 2.7 | 3 | 3.2 | 3.5 | 3.8 | 4.1 | 4.4 | 4.7 | 5 | 5.4 | 5.7 | 6 | 6.4 | 6.7 | 7.1 |
| | 14 | 0.8 | 0.9 | 1 | 1.2 | 1.3 | 1.5 | 1.7 | 1.9 | 2.1 | 2.4 | 2.6 | 2.9 | 3.1 | 3.4 | 3.7 | 3.9 | 4.2 | 4.5 | 4.8 | 5.1 | 5.5 | 5.8 | 6.1 | 6.5 | 6.8 |

FIRE BEHAVIOR DECISION MATRIX (Flame Length) Fuel Model TL8

| | | | | | | | | | | | 14 | 10 | uc. | | | | | | | | | | | | | |
|----------|----|-----|-----|-----|-----|-----|-------|------|------|-----|-------|-----|-----|--------|-------|------|--------|-------|-------|------|-----|-----|-----|-----|-----|-----|
| | | | | | | | 20' W | /ind | Spee | d/M | id Fl | ame | MPF | l (cal | culat | ed v | vith p | oresc | ripti | on W | AF) | | | | | |
| E. | % | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| ro e | 3 | 2 | 2.1 | 2.2 | 2.4 | 2.5 | 2.7 | 2.8 | 3 | 3.1 | 3.3 | 3.4 | 3.6 | 3.7 | 3.9 | 4 | 4.1 | 4.3 | 4.4 | 4.6 | 4.7 | 4.8 | 5 | 5.1 | 5.2 | 5.3 |
| Dead | 4 | 1.9 | 2 | 2.1 | 2.2 | 2.4 | 2.5 | 2.6 | 2.8 | 2.9 | 3.1 | 3.2 | 3.3 | 3.5 | 3.6 | 3.7 | 3.9 | 4 | 4.1 | 4.2 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 5 |
| Fu | 5 | 1.7 | 1.8 | 1.9 | 2.1 | 2.2 | 2.3 | 2.5 | 2.6 | 2.7 | 2.9 | 3 | 3.1 | 3.2 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 4 | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 |
| <u>o</u> | 6 | 1.6 | 1.7 | 1.8 | 1.9 | 2.1 | 2.2 | 2.3 | 2.4 | 2.6 | 2.7 | 2.8 | 2.9 | 3 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4 | 4.2 | 4.3 | 4.4 |
| ≥ | 7 | 1.5 | 1.6 | 1.7 | 1.8 | 2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.7 | 2.8 | 2.9 | 3 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 | 4 | 4.1 |
| oisture | 8 | 1.5 | 1.5 | 1.6 | 1.7 | 1.9 | 2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.8 | 3.9 |
| ē | 9 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 | 3.7 |
| | 10 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3 | 3.1 | 3.2 | 3.3 | 3.3 | 3.4 | 3.5 | 3.6 |
| | 11 | 1.3 | 1.4 | 1.5 | 1.6 | 1.6 | 1.7 | 1.8 | 1.9 | 2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3 | 3.1 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 |
| | 12 | 1.3 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3 | 3 | 3.1 | 3.2 | 3.3 | 3.4 |
| | 13 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.6 | 1.7 | 1.8 | 1.9 | 2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.6 | 2.7 | 2.8 | 2.9 | 3 | 3 | 3.1 | 3.2 | 3.3 |
| | 14 | 1.2 | 1.3 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2 | 2.1 | 2.2 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.9 | 3 | 3.1 | 3.1 | 3.2 |

Fuel Model TU5

Dry Climate Timber Shrub (Gambel Oak)

| | | PRESC | RIBED V | VEATHER CONDITIONS | | | |
|-------------------------|------------|---------------|--------------|-------------------------------|------------|----------------|---------|
| VARIABLE | LOW | OPTIMAL | HIGH | VARIABLE | LOW | OPTIMAL | HIGH |
| Temperature | 35 | 70 | 85 | Mid Flame Wind Speed | 1.6 | 4.8 | 8.8 |
| Relative Humidity | 45 | 20 | 15 | 20' Wind Speed | 4 | 12 | 22 |
| Fine Dead FM | 14 | 7 | 5 | 20' Gust Limit | 33 | 27 | 25 |
| Smoke Vector (Win | d Dir)- S | outh, East, \ | N est | Wind Adjustment Factor (W | VAF): .4 | | |
| Smoke Avoidance (| Wind Di | r)- See Attac | hed | WAF Rational4 Chosen due | e to cano | py structure | and |
| smoke permit | | | | past experiences burning in t | his fuel t | ype. | |
| | | PRESCRIB | ED MOIS | STURE CONTENT OF FUELS | | | |
| SIZE CLASS /TYPE | LOW | OPTIMAL | HIGH | SIZE CLASS/TYPE | LOW | OPTIMAL | HIGH |
| 1 Hour Dead | 14 | 7 | 5 | Live Woody | 150 | 125 | 90 |
| 10 Hour Dead | 16 | 8 | 6 | Live Herbaceous | 150 | 125 | 90 |
| 100 Hour Dead | 18 | 10 | 8 | Upper Duff | n/a | n/a | n/a |
| 1000 Hour Dead | n/a | n/a | n/a | Lower Duff | n/a | n/a | n/a |
| | | | | TION AND FIRE BEHAVIOR | | | |
| Time of Ignition | | March, A | April, Ma | ay, June-August, September, | Octobe | r, Novembei | ſ |
| Ignition Method | | Hand Igi | nition Bl | ack Line – Aerial ping pong o | r Helitoi | rch | |
| Acceptable Firing | | Strip He | ad, Flan | king, Backing, Spot Ignition | | | |
| Techniques/patterr | | | | | | | |
| Fire Behavior Fuel N | Model Se | election Rati | onal:TU | | | | |
| | | | | Flame lengths between 1 | to 11 fe | et. Rates of s | pread 1 |
| Primary carrier of fi | | - | orest litt | er to 21 chains/hr. | | | |
| with a shrub or sma | III tree u | nderstory. | | | | | |
| | 1014 | ODTINA | | | 1011 | 0071114 | |
| | LOW | OPTIMAL | HIGH | D 1 (1 111 | LOW | OPTIMAL | HIGH |
| Spot Distance- Miles | .2 | .4 | .6 | Prob. of Ignition | 15 | 60 | 75 |
| Flame Length- | 0-6 | 6-8 | 8-11 | Rate of Spread- | 0-6 | 6-14 | 10- |
| Feet | | | | Chains/HR | | | 21 |

Flame lengths will vary during the firing operation and may for short periods of time approach upper prescription parameters dependent upon firing techniques, weather conditions, fuel jackpots and topography. The firing boss will need to alter the firing techniques to maintain prescription parameters and may have to stop ignition operations until more favorable conditions exist.

Wind gust will increase Rate of spread to 23.4 chains per hour and flame length to 11.4 feet Wind Gust Definition- NWS

Is a sudden, brief increase in speed of the wind. According to U.S. weather observing practice, gusts are reported when the peak wind speed reaches at least 16 knots and the variation in wind speed between the peaks and lulls is at least 9 knots. The duration of a gust is usually less than 20 seconds.

FIRE BEHAVIOR DECISION MATRIX (Rate of Spread) Fuel Model TU5

| Ŧ. | | | | | | | | 20 | ' Wir | nd Sp | eed/ | Mid l | Flame | MPI | l (cal | culate | d wit | th pre | scrip | tion W | /AF) | | | | | |
|----------|----|-----|-----|-----|-----|-----|-----|-----|-------|-------|------|-------|-------|-----|--------|--------|-------|--------|-------|--------|------|------|------|------|------|------|
| ne E | % | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| De ad | 3 | 2.3 | 3 | 3.7 | 4.4 | 5.2 | 5.9 | 6.8 | 7.6 | 8.5 | 9.3 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 17.8 | 18.8 | 19.8 | 20.8 | 21.8 | 22.8 | 23.8 |
| П | 4 | 2.2 | 2.8 | 3.4 | 4.1 | 4.9 | 5.6 | 6.4 | 7.2 | 8 | 8.8 | 9.7 | 11 | 11 | 12 | 13 | 14 | 15 | 16 | 16.8 | 17.7 | 18.7 | 19.6 | 20.6 | 21.5 | 22.5 |
| uel | 5 | 2.1 | 2.7 | 3.3 | 3.9 | 4.6 | 5.3 | 6.1 | 6.8 | 7.6 | 8.4 | 9.2 | 10 | 11 | 12 | 13 | 13 | 14 | 15 | 16 | 16.8 | 17.7 | 18.6 | 19.6 | 20.5 | 21.4 |
| <u>≤</u> | 6 | 2 | 2.5 | 3.1 | 3.8 | 4.4 | 5.1 | 5.8 | 6.5 | 7.3 | 8 | 8.8 | 9.5 | 10 | 11 | 12 | 13 | 14 | 14 | 15.2 | 16.1 | 16.9 | 17.8 | 18.7 | 19.6 | 20.4 |
| istu | 7 | 1.9 | 2.4 | 3 | 3.6 | 4.2 | 4.9 | 5.6 | 6.3 | 7 | 7.7 | 8.4 | 9.2 | 9.9 | 11 | 12 | 12 | 13 | 14 | 14.6 | 15.5 | 16.3 | 17.1 | 17.9 | 18.8 | 19.6 |
| ē | 8 | 1.9 | 2.4 | 2.9 | 3.5 | 4.1 | 4.7 | 5.4 | 6 | 6.7 | 7.4 | 8.1 | 8.8 | 9.6 | 10 | 11 | 12 | 13 | 13 | 14.1 | 14.9 | 15.7 | 16.5 | 17.3 | 18.1 | 18.9 |
| | 9 | 1.8 | 2.3 | 2.8 | 3.4 | 4 | 4.6 | 5.2 | 5.8 | 6.5 | 7.2 | 7.9 | 8.6 | 9.3 | 10 | 11 | 11 | 12 | 13 | 13.7 | 14.4 | 15.2 | 16 | 16.8 | 17.5 | 18.3 |
| | 10 | 1.7 | 2.2 | 2.7 | 3.3 | 3.8 | 4.4 | 5.1 | 5.7 | 6.3 | 7 | 7.6 | 8.3 | 9 | 9.7 | 10 | 11 | 12 | 13 | 13.3 | 14 | 14.8 | 15.5 | 16.3 | 17 | 17.8 |
| | 11 | 1.7 | 2.2 | 2.7 | 3.2 | 3.7 | 4.3 | 4.9 | 5.5 | 6.2 | 6.8 | 7.4 | 8.1 | 8.8 | 9.4 | 10 | 11 | 12 | 12 | 12.9 | 13.6 | 14.4 | 15.1 | 15.8 | 16.6 | 17.3 |
| | 12 | 1.7 | 2.1 | 2.6 | 3.1 | 3.7 | 4.2 | 4.8 | 5.4 | 6 | 6.6 | 7.2 | 7.9 | 8.5 | 9.2 | 9.9 | 11 | 11 | 12 | 12.6 | 13.3 | 14 | 14.7 | 15.4 | 16.2 | 16.9 |
| | 13 | 1.6 | 2 | 2.5 | 3 | 3.6 | 4.1 | 4.7 | 5.3 | 5.8 | 6.4 | 7.1 | 7.7 | 8.3 | 9 | 9.6 | 10 | 11 | 12 | 12.3 | 13 | 13.6 | 14.3 | 15 | 15.8 | 16.5 |
| | 14 | 1.6 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5.1 | 5.7 | 6.3 | 6.9 | 7.5 | 8.1 | 8.7 | 9.4 | 10 | 11 | 11 | 12 | 12.6 | 13.3 | 14 | 14.7 | 15.3 | 16 |

FIRE BEHAVIOR DECISION MATRIX (Flame Length) Fuel Model TL5

| Ξ | | | | | | | | 20 | ' Wir | nd Sp | eed/ | /Mid | Flame | MPH | l (cal | culate | ed wi | th pre | scrip | tion W | VAF) | | | | | |
|------|----|-----|-----|-----|-----|-----|-----|-----|-------|-------|------|------|-------|-----|--------|--------|-------|--------|-------|--------|------|------|------|------|------|------|
| O | % | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| Dead | 3 | 4.1 | 4.6 | 5.1 | 5.5 | 5.9 | 6.3 | 6.7 | 7.1 | 7.4 | 7.8 | 8.1 | 8.4 | 8.7 | 9.1 | 9.3 | 9.6 | 9.9 | 10 | 10.5 | 10.7 | 11 | 11.2 | 11.5 | 11.7 | 12 |
| Ē | 4 | 3.9 | 4.4 | 4.8 | 5.3 | 5.7 | 6 | 6.4 | 6.8 | 7.1 | 7.4 | 7.8 | 8.1 | 8.4 | 8.7 | 8.9 | 9.2 | 9.5 | 9.7 | 10 | 10.3 | 10.5 | 10.7 | 11 | 11.2 | 11.4 |
| e | 5 | 3.8 | 4.2 | 4.6 | 5 | 5.4 | 5.8 | 6.2 | 6.5 | 6.8 | 7.1 | 7.5 | 7.7 | 8 | 8.3 | 8.6 | 8.8 | 9.1 | 9.4 | 9.6 | 9.9 | 10.1 | 10.3 | 10.6 | 10.8 | 11 |
| Mo: | 6 | 3.6 | 4.1 | 4.5 | 4.9 | 5.2 | 5.6 | 5.9 | 6.3 | 6.6 | 6.9 | 7.2 | 7.5 | 7.8 | 8 | 8.3 | 8.5 | 8.8 | 9 | 9.3 | 9.5 | 9.7 | 10 | 10.2 | 10.4 | 10.6 |
| istu | 7 | 3.5 | 3.9 | 4.3 | 4.7 | 5.1 | 5.4 | 5.8 | 6.1 | 6.4 | 6.7 | 7 | 7.3 | 7.5 | 7.8 | 8 | 8.3 | 8.5 | 8.8 | 9 | 9.2 | 9.4 | 9.7 | 9.9 | 10.1 | 10.3 |
| re e | 8 | 3.4 | 3.8 | 4.2 | 4.6 | 5 | 5.3 | 5.6 | 5.9 | 6.2 | 6.5 | 6.8 | 7.1 | 7.3 | 7.6 | 7.8 | 8.1 | 8.3 | 8.5 | 8.8 | 9 | 9.2 | 9.4 | 9.6 | 9.8 | 10 |
| | 9 | 3.4 | 3.8 | 4.1 | 4.5 | 4.8 | 5.2 | 5.5 | 5.8 | 6.1 | 6.4 | 6.6 | 6.9 | 7.2 | 7.4 | 7.7 | 7.9 | 8.1 | 8.3 | 8.6 | 8.8 | 9 | 9.2 | 9.4 | 9.6 | 9.8 |
| | 10 | 3.3 | 3.7 | 4.1 | 4.4 | 4.7 | 5.1 | 5.4 | 5.7 | 6 | 6.2 | 6.5 | 6.8 | 7 | 7.3 | 7.5 | 7.7 | 8 | 8.2 | 8.4 | 8.6 | 8.8 | 9 | 9.2 | 9.4 | 9.6 |
| | 11 | 3.2 | 3.6 | 4 | 4.3 | 4.7 | 5 | 5.3 | 5.6 | 5.9 | 6.1 | 6.4 | 6.6 | 6.9 | 7.1 | 7.4 | 7.6 | 7.8 | 8 | 8.2 | 8.4 | 8.6 | 8.8 | 9 | 9.2 | 9.4 |
| | 12 | 3.2 | 3.5 | 3.9 | 4.3 | 4.6 | 4.9 | 5.2 | 5.5 | 5.8 | 6 | 6.3 | 6.5 | 6.8 | 7 | 7.2 | 7.5 | 7.7 | 7.9 | 8.1 | 8.3 | 8.5 | 8.7 | 8.9 | 9.1 | 9.3 |
| | 13 | 3.1 | 3.5 | 3.8 | 4.2 | 4.5 | 4.8 | 5.1 | 5.4 | 5.7 | 5.9 | 6.2 | 6.4 | 6.7 | 6.9 | 7.1 | 7.3 | 7.5 | 7.8 | 8 | 8.2 | 8.4 | 8.5 | 8.7 | 8.9 | 9.1 |
| | 14 | 3.1 | 3.4 | 3.8 | 4.1 | 4.4 | 4.7 | 5 | 5.3 | 5.6 | 5.8 | 6.1 | 6.3 | 6.5 | 6.8 | 7 | 7.2 | 7.4 | 7.6 | 7.8 | 8 | 8.2 | 8.4 | 8.6 | 8.8 | 8.9 |

Element 8: Scheduling

| A. Ignition Time Frames/Season(s) | Burning may occur from January 1 st through December 31 st . Most likely will be implemented in the fall, but will burn when and if Rx parameters and weather conditions are met. |
|-----------------------------------|--|
| B. Projected Duration | Burning may occur January 1 st through December 31 st . Project duration may take from one day to two weeks to complete implementation. See attached smoke permit for additional Colorado State smoke duration requirements. All of the Units may be burned multiple times under this Burn Plan. This Burn Plan will remain in effect as long as it represents the conditions of the fuels and the Risk Analysis or until management direction dictates the need to update or abandon the burn plan. |

C. Constraints

These constraints and considerations are specific to burn scheduling. Scheduling will be dependent on weather and fuels conditions, smoke permit conditions and availability of qualified personnel.

At National Preparedness Levels Four and Five, prescribed fire implementation is restricted. See National Interagency Mobilization Guide for details.

Element 9: Pre-burn Considerations and Weather

A. Considerations

1. On Site

- a. **Hunting Season**: Signs will be posted on open roads at least one week prior to opening day of hunting seasons.
- b. Line Construction: Control lines will need to be constructed along the fence lines bounding private property and in some other areas. This will need to be accomplished prior to burn dates. Construction can be completed with handcrews, or ATV drag. Final line location will have NEPA clearances and are depicted on the Project Map. ATV drag lines will not be constructed in drainage bottoms, wetlands, or within 25 feet of stream channels. Lines will not be constructed when soils are saturated. Snags which can compromise control lines will be lined or felled as needed. Ponderosa pine snags greater than 16' DBH will be lined, unless the snag will present an unreasonable threat to control lines.
- c. All constructed **control lines** will be posted with signs where they intersect with roads and trails indicating that it is a fireline and is closed to all vehicles, including bicycles, and horses. All control lines that intersect with open roads

- or trails will be blocked or rehabilitated to prevent motorized vehicle use and discourage non-motorized use following burns.
- d. **Fences**: Fences with wooden posts must be protected from fire during burning operations. The fences which bound private lands will be protected through line placement. Some of the well pad fences will require protection, although most are located in gravel or native soils. These fences will be evaluated prior to burns and mitigation action taken as needed. Fences within units will also be checked prior to burning. Fire danger to these fences can be mitigated through pulling back burnable material prior to the burn or altering firing techniques to minimize impacts to the posts.
- e. **Electric transmission lines**: Fuels around wooden power poles will need to be mitigated with an 18 inch buffer of bare mineral soil surrounding all wooden poles.
- f. **Snags**: Class 1 and 2 ponderosa pine snags greater than 16" DBH will be lined, brushed or foamed, as necessary. Class 3 snags greater than 16" DBH and class 1 and 2 snags 9-16" DBH will be protected by ignition techniques where feasible.

Snag Classification:

Class 1- represents those trees that have died recently and retain most of their bark and most of their branches; the top is intact. Very little decay has occurred in the wood, unless the tree had heart-rot decay when it was living.

Class 2- represents those snags that have been dead at least several years and have lost some branches and some bark (except grand fir and Douglas-fir, which tend to retain their bark after death); tops are often broken; there is some evidence of decay.

Class 3- represents those snags that have been dead a long time and lack branches and bark (except grand fir and Douglas-fir, which tend to retain their bark after death). Tops are broken off, and the sapwood and heartwood are extensively decayed.

2. Off Site

"Prescribed Fire" signs will be posted on Highway 160 so that they are visible to both east and west bound traffic. Signs will also be posted on Sauls Creek Road (La Plata county road #526). An additional sign will be placed on Forest Service RD 743 at the intersection of HWY 160. Smoke will be monitored and the number and placement of signs will be modified as needed.

Prior to implementing the prescribed fire, the responsible dispatch office and local cooperators (Per Lower North Fork lessons learned) **will** be provided a complete copy (printed or electronic version) of the Prescribed Fire Plan.

B. Method and Frequency for Obtaining Weather and Smoke Management Forecast(s)

| Proximity to nearest RAWS | Devil M | lountain RA | WS (Sta | tion id#055901) |
|---------------------------|---------|-------------|---------|-----------------|
| Need for on-site RAWS | | Yes | X | No |
| Additional Information | | | | |

As a minimum Fuel sticks, both elevated and at ground level, will be placed in a representative area within the burn area at least three days prior to the anticipated burn date. Weather information will be collected for two days prior to burning and provided to the NWS along with site information for spot weather forecasts. Each spot forecast, at a minimum, will request temperature, wind, relative humidity, transport winds and smoke dispersal for the day of the burn and the following day.

A Spot Weather Forecast from the National Weather Service is required prior to ignition, for each day active ignition is occurring on the burn, and any days the fire is actively spreading. The National Weather Service Grand Junction. Forecast Office can be reached at 970-256-9463 or a spot weather forecast can be requested online at http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=gjt

Within the remarks section of the Spot Weather Request form, a point of contact cellular phone number should be included in addition to data requested on the form. Requestors of the Spot Weather Forecast should insure data is correct.

Projected weather beyond the ignition operation and need for additional spot weather forecasts should be taken into account in order to minimize the risk of a later escape. The Prescribed Fire Burn Boss or other person in charge of mop-up and patrol will also obtain and review the spot weather or general fire weather forecast to determine if mop up and patrol resources are adequate. A copy of the forecast will be included in the Project File. Local weather phenomena and considerations include (entered local weather information).

C. Notifications

| Who | | When ¹ | Phone Number and/or e-mail | Responsibility | y | Date | Contact Type ² |
|--|---------------------|-------------------|--|---------------------------|----------|---|------------------------------|
| Durango Interagency Dispatch | Fire | B, D, A | 970-385-1325 | Burn Boss | | | |
| Richard Bustamante San Juan Forest FMC | | B, D, A | 970-385-1346 (w) 970-749-8127 (c) | Burn Boss | | | |
| Chris Tipton DV8 SJNF-Central Zone F | FMO | B, D, A | 970-884-1427 (w) 303-898-7128 (c) | Burn Boss | | | |
| District Ranger | | B, D, A | 970-884-1438 (w) 970-764-7380 (c) | Burn Boss | | | |
| Ann Bond San Juan Nation Fore Information Specialis | | B, A | 970-385-1219 (w) 970-799-1210 (c) | Burn Boss | | | |
| Durango Central | | В | 970-385-2900 | Burn Boss | | | |
| Archuleta County and | d Pagosa Fire | В | 970-264-2131 | Burn Boss | | | |
| Archuleta County EM | И 1 | В | 970-371-2160(Dptch) 970-371-4799 (w) | Burn Boss | | | |
| Durango Fire & Reso | cue Authority | В | 970-382-6000 | Burn Boss | | | |
| Upper Pine River Fir District | e Protection | В | 970-884-9508 | Burn Boss | | | |
| Smoke Management | | B, A | 303-692-3224 | Burn Boss | | | |
| San Juan Basin Healt | th | В | 970-247-5702 | Burn Boss | | | |
| Colorado State Fores Durango | t Service | В | 970-247-5250 | Burn Boss | | | |
| Colorado State Patro | 1 | В | 970-385-1675 | Burn Boss | | | |
| Los Pinos Fire Protec | ction District | В | 970-563-9501 | Burn Boss | | | |
| Southern Ute Agency | y (BIA) | В | 970-563-4571 | Burn Boss | | | |
| ENERGY | | | | | | | |
| Tri-State Generation Transmission Associ Robert Flores | | В | 970-382-1934 (c) 303-254-3642 Dispatch | Burn Boss | | | |
| La Plata Electric | | В | 970-731-2316 | Burn Boss | | | |
| Petrox Energy | | В | 970-878-5594 | Burn Boss | | | |
| ¹ When to Notify | Day of (D) : | Prior to ig | prior to burn day. gnition on burn day. s completed. | ² Contact Type | Ph Di | one Contact one Messago rect Contact mail (EM) | e (PM) |

| <u>Private</u> | | | | | | | |
|------------------------------|---------------------|-------------|--|---------------------------|----------|---|--------|
| Kathleen M Delzell | Γrust | B,D | 970-884-7022 | Burn Boss | | | |
| Jeffrey H Munger Re Trust | evocable | B,D | 970-884-4927 | Burn Boss | | | |
| William S Vance Jr | | B,D | 970-884-2635 | Burn Boss | | | |
| Edwards Durwood | | B,D | Call Arch County Later for # | Burn Boss | | | |
| Bryan H and Marites | G Tracy | B.D | Call Arch County Later for # | Burn Boss | | | |
| ¹ When to Notify | Day of (D) : | Prior to ig | orior to burn day. gnition on burn day. s completed. | ² Contact Type | Ph Di | one Contact one Message rect Contact mail (EM) | e (PM) |

Tri-State Generation and Transmission would like to be notified 15 days prior to ignition to coordinate operations within their organization.

Element 10: Briefing

| Operat | tional Briefing (Responsibility – Prescribed Fire Burn Boss) |
|--------|--|
| | Introduction of Burn Organization |
| | Make Crew and Equipment Assignments |
| | Provide Description of Prescribed Fire Area and Maps |
| | Review Prescribed Fire Objectives and Constraints |
| | Review Spot Weather Forecast |
| | Discuss Weather Data Collection Procedures |
| | Make Weather Observer Assignment and Set Collection Schedule |
| | Review Predicted Fire Behavior |
| | Review Burn Prescription and Critical Weather that Will Terminate Burn |
| | Review Ignition Plan and Possible Problems |
| | Review Aerial Ignition Plan and appropriate safety procedures (if applicable) |
| | Review Holding Plan and Possible Problems |
| | Review Contingency and Wildfire Conversion Plan |
| | Identify High Value and Areas of Special Concern |
| | o Identify Mitigation Measures, Procedures, Project Boundary, Etc. |
| | Review Safety and Medical Plan along with Risk Assessment/JHA |
| | o Identify On-Site Personnel with Medical and Helitack Qualifications |
| | Review LCES and Identify Lookout Assignments |
| | Discuss Communication Plan |
| Crew I | Briefing (Responsibility - Ignition Specialist and Holding Specialist Functions) |
| | Make Crew Assignments, Record Names, and Review Chain of Command |
| | Make Equipment Assignments and Physically Test Equipment Prior to Ignition |
| | Assign Radio Frequencies and Physically Test All Radios Prior to Ignition |
| | Review Contingency Plan, Wildfire Conversion, Procedures, and Mitigation |
| | Review Everyone's Personal Protective Equipment |
| | Discuss Probable Starting and Ending Times |
| | Assure Everyone Knows Position, Responsibility, and Procedures |

Element 11: Organization and Equipment

| Minimum Workforce & Equipment Needed to Conduct Burn | | | | | | | | |
|--|-----------------------------------|-----------------|--------------------------|-----------------|--------------------------|-----------------|--------------------------|--|
| A. Positions | | | | | | | | |
| | | L | ow | ОРТ | OPTIMAL | | High | |
| Position | ICS Code or Unit of Measure | Total Amount | Line Building Rate | Total Amount | Line Building Rate | Total Amount | Line Building Rate | |
| Prescribed Fire Burn Boss | RXB2 | 1 | (1) | 1 | | 1 | | |
| Ignition Specialist Function | FIRB | 1 | | 1 | | 1 | | |
| Holding Specialist Function | ST/TFLD | 1 | | 1 | | 1 | | |
| Fire Effects Monitor | FEMO | 1 | | 1 | | 1 | | |
| Lookout | SRB | 1 | | 1 | | 1 | | |
| Engine Boss, Operator, and Crew | ENGB/ENOP | 2 | | 2 | | 2 | | |
| Ignition Crew | FFT2 | 20 | 20 | 20 | 20 | 20 | 20 | |
| Holding Crew | FFT2 | 10 | 10 | 10 | 10 | 10 | 10 | |
| B. Equipment | | | | | | | | |
| Engine (Type) | Type 6 | 2 | 24 | 2 | 24 | 2 | 24 | |
| Engine (Type) | N/A | | | | | | | |
| Dozer (Type) | N/A | | | | | | | |
| Helicopter | Type 3 | 1-As Needed | | 1-As Needed | | 1-As Needed | | |
| Helitorch | Type 3 | 1-As Needed | | 1-As Needed | | 1-As Needed | | |
| Plastic Sphere Dispenser | Type 3 | 1-As Needed | | 1-As Needed | | 1-As Needed | | |
| C. Supplies | | | | | | | | |

At a minimum the following supplies will be needed on scene

- Drip Torches
- Drip Torch Fuel
- Ping Pong Balls
- Other ignition equipment necessary to assist burning
- Appropriate road signage

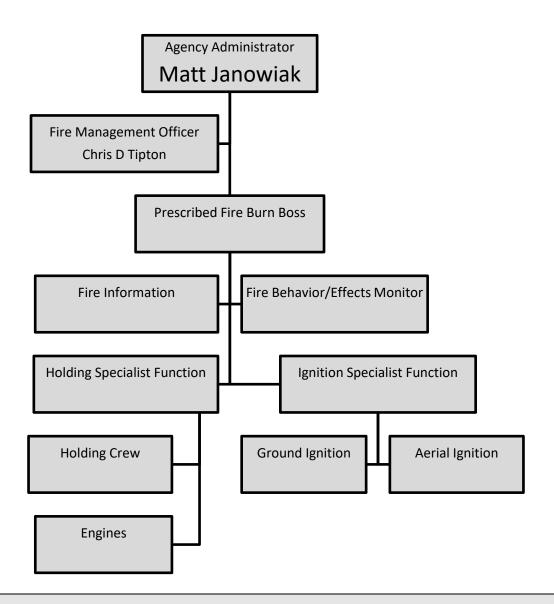
Total Line Production Rate 54 54 54

There will need to be minimum Line production rate from personnel of 54 chains per hour on site to begin any ignitions. Fireline Handbook production rates and/or documented empirical evidence to justify minimum holding resources required. Line production rates should be compared to fire behavior outputs when identifying resource needs.

No personnel will be assigned collateral duties

Calculations were taken from the Fireline Handbook Appendix A based on fuel models in the plan

Organization Chart



Additional resources may be assigned to the project without amending the burn plan if the addition of these resources does not change the complexity of the burn or require additional supervisory positions. These changes must be documented in the Unit Log. Reduction in resource capabilities identified as required in the plan requires an amendment. As the prescribed fire progresses from ignition to holding to mop up and patrol, specified capabilities and/or types of resources may be adjusted.

Element 12: Communication

A. Radio Frequencies

| Channel | Function | Fre | Frequency | | Assignment | Remarks | | |
|----------------------------------|----------------|---------------------|-----------------------------|---|---|--------------------------------------|--|--|
| COMMAND Width Assignment Remarks | | | | | | | | |
| 6 | FS E RPTR | TX: RX: Tone: | 164.937 169.925 167.9 | N | Communication w/ Durango Dispatch | Group 5, channel 6, Tone 3 Pargin | | |
| | | TX: RX: Tone: | | | | | | |
| TACTIC | AL | | | | | | | |
| 1 | TAC 1 | TX: RX: | 168.175 168.175 | N | Ignition | Group 5, channel 1 | | |
| 3 | TAC 3 | TX: RX: | 168.775 168.775 | N | Holding | Group 5, channel 3 | | |
| AIR OPE | AIR OPERATIONS | | | | | | | |
| 15 | A/G 31 | TX: RX: | 171.525 171.525 | N | A/G Primary Aerial Ignition | Group 5, channel 15 | | |
| 14 | A/G 7 | TX: RX: | 166.850 166.850 | N | A/G Secondary | Group 5, channel 14 | | |
| OTHER | | | | | | | | |
| 2 | FIRETAC7 | TX: RX: | 169.287 169.287 | N | Interagency Communication | Group 5, channel 2 | | |
| 4 | VFIRE21 | TX: RX: | | | Local Resources | Group 5, channel 4 | | |
| REMARK | S | | | | | | | |

Positive communications with a dispatch center is required via radio, cellular phone, and/or satellite phone, prior to implementing burn project.

Element 13: Public and Personnel Safety, Medical

A. Safety Hazards

Firefighter

Safety hazards include, but are not limited to, smoke inhalation and impaired visibility, tripping and falling, ATV rollover, entrapment, minor burns, fatigue and dehydration, vehicle accidents, stinging insects. Aviation (Heli torch, ping pong) operations.

All personnel who are within the active burn area are required to wear personal protective equipment.

Public

A robust outreach will be implemented in the months prior to ignition so all public and recreationists are aware of the project implementation time frames.

All control lines and burn units will be scouted for public by either ground resources and or Helicopter.

B. Measures Taken to Reduce the Hazards

- 1. <u>Smoke inhalation/visibility:</u> Minimize exposure. Increase loft when possible. Rotate personnel out of smoke. Use flashing lights on all vehicles.
- 2. <u>Tripping and Falling</u>: Wear proper footwear. Minimize number of personnel on very steep slopes. Slow down.
- 3. <u>ATV rollover</u>: Ensure all ATV operators are trained and qualified. Be extra careful with loads such as water tanks, torches and supplies.
- 4. <u>Entrapment:</u> All personnel on firing crew have radios. Maintain good communication, firing sequence and pattern. Observe and communicate fire behavior and hazards.
- 5. <u>Fatigue and Dehydration</u>: Take frequent food and water breaks. Rotate personnel into physically demanding positions. Ensure all personnel are consuming sufficient water. Have extra supplies of water available.
- 6. <u>Minor burns from Drip Torches:</u> All personnel on firing crew must understand operation of drip torches. Do not use leaky torches. Avoid dripping fuel mix on gloves or clothing. Refill torches in a safe location away from active fire.
- 7. <u>Vehicle Accidents:</u> Wear seatbelts and obey traffic laws. Practice defensive driving.
- 8. <u>Insect bites:</u> When wasp or bee nests are found make sure to let other personnel know of the location. Flag the area if they are located in a high use area.
- 9. <u>Aviation Operations:</u> Maintain positive communications to ensure ground resources are all in the proper staging or assigned areas. See Attached PSD Project Aviation Safety Plan

A job hazard analysis (JHA) or other agency-specific risk analysis is required for each prescribed fire.

Trauma Assessment Categories & Patient Transport Categories

| | Trauma Assessment | Patient Transport Methods | | | | | | |
|--|---|---|--|--|--|--|--|--|
| Level One | | | | | | | | |
| | Examples- Unstable airway, | Automatic launch-Flight for Life + Hoist Helicopter | | | | | | |
| | severe facial trauma with | +Emergeny Ground Response. | | | | | | |
| | compromised airway, facial | RESPONSE CONTINUED UNTIL PATIENT | | | | | | |
| | burns, suspected head injury | TRANSPORTED | | | | | | |
| | with LOC > 5 min, positive | | | | | | | |
| | MOI for spinal cord injury, | | | | | | | |
| | cardiac injury, open chest | | | | | | | |
| | wound, flail chest, pelvic | | | | | | | |
| | trauma, multiple long bone | | | | | | | |
| Immediate lifesaving | fractures, penetrating | | | | | | | |
| intervention required | trauma to the head/neck/ | | | | | | | |
| | face, electrical injury, greater | | | | | | | |
| | than 20% surface area burn | | | | | | | |
| | combined with any other | | | | | | | |
| | injury, multi system trauma, | | | | | | | |
| | arterial bleeding, massive | | | | | | | |
| | crush injury. Vitals –Systolic | | | | | | | |
| | BP<100 (No peripheral | | | | | | | |
| | pulse) or cardiac arrest, GCS< | | | | | | | |
| | 8 | | | | | | | |
| | Level Tw | 0 | | | | | | |
| | Examples-Facial trauma with | | | | | | | |
| | NO airway compromise, | | | | | | | |
| | pelvic fractures with no | Automatic launch-Flight for Life + Emergency Ground Response | | | | | | |
| | shock, suspected pelvic | | | | | | | |
| | fracture, multiple long bone | | | | | | | |
| Significant Injury with high | fractures with no shock, | | | | | | | |
| risk of needing lifesaving | known solid organ injury, | Standby Hoist Helicopter | | | | | | |
| intervention | amputation of distal | RESPONSE CONTINUED UNTIL PATIENT | | | | | | |
| 111001 V 01101011 | extremities, open fractures, | TRANSPORTED | | | | | | |
| | penetrating trauma with no | Transfer of TBB | | | | | | |
| | arterial bleeding and stable | | | | | | | |
| | vital signs, falls less than | | | | | | | |
| | body height, GCS 9-13 with | | | | | | | |
| | LOC< 5min | | | | | | | |
| | Level Thr | | | | | | | |
| | Examples- Dehydration, | Automatic launch - Emergency Ground Response | | | | | | |
| Deticate the second of the second | possible bone fractures, heat | Automatic Airborne Standby -Flight for life | | | | | | |
| Patient with moderate risk of | related illnesses, abdominal | RESPONSE CONTINUED UNTIL PATIENT | | | | | | |
| needing lifesaving | pain, immobilized with no | TRANSPORTED | | | | | | |
| intervention | significant injury, LOC < 5 | | | | | | | |
| | min, GCS 14-15, superficial | | | | | | | |
| | soft tissue trauma | 12 | | | | | | |
| Level Four Examples Converted and Automatic launch NON emergancy Cround Regions | | | | | | | | |
| Patient with low risk of | Examples -General cold, minor lacerations, sprains, | Automatic launch-NON emergency Ground Response Automatic Ground Standby-Flight for life | | | | | | |
| needing lifesaving | strains, flu like symptoms, | Automatic Ground Standby-Flight for file | | | | | | |
| intervention | severe blisters, poison ivy | | | | | | | |
| mich vention | reaction, rash. | | | | | | | |
| | Level Fiv | | | | | | | |
| Patient with no risk of | Examples -Nuisance aches | Agency/Crew/Engine/Safety Officer Transport | | | | | | |
| needing lifesaving | and pains, minor blisters, | Ingency/ Grew/ Engine/ safety Officer Transport | | | | | | |
| intervention | minor sunburns. | | | | | | | |
| IIICI VEILIOII | minor sumburns. | | | | | | | |

Emergency Medical Procedures

C. In the event of serious accidents or injuries, the burn boss shall be notified immediately. Individuals with medical qualifications (i.e. First Responder, EMT, Paramedic) and helitack qualified should be identified at the pre-burn briefing. The burn boss will initiate on-site response (if not already in progress) and coordinate additional response needs through: Durango Dispatch. Provide dispatch with the type(s) of injury, number of persons injured, and basic vital signs. Utilize on-site EMTs and/or first aid treatment to stabilize and comfort the patient(s). Do not transmit names of injured personnel over the radio.

EMS will be activated through contacting dispatch (or from on-site personnel through 911). For burn injuries, after on-site medical response, initial medical stabilization, and evaluation at a primary care facility are completed, District Managers will ensure that any employee whose injuries meet burn injury criteria is immediately referred to the nearest regional burn center.

D. Emergency Evacuation Methods

The first option is to transport the injured person(s) via on-site vehicles to Mercy Medical Center. For minor injuries, individuals who are ambulatory will be transported to Mercy Medical Center. Directions from the burn unit to the medical facility are as follows: Take Hwy 160 West for 27 miles, Turn right onto Three Springs Blvd, at the traffic circle continue straight to stay on Three Springs Blvd. The travel time is about 30 minutes. Medical facility will be contacted and advised of injuries and eta for transport of injured individual.

The second option is to transport the injured person(s) to meet an ambulance at location known to both project personnel and emergency services.

These locations can be on Hwy 160 at: USFS RD 527 Sauls Creek RD, Lange Canyon RD or USFS RD 743 Yellow Jacket Relay Station RD.

These locations will be Briefed and Known to all prior to implementation.

The third option is to transport the injured person(s) to the nearest helispot to be evacuated via air ambulance.

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Helispot 1 - N 37 15.349 W 107 27.927 – Relay Station
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Helispot 2 - N 37 15.600 W 107 30.653 - Well Pad 1

Helispot 3 - N 37 16.053 W 107 30.699 - Well Pad 2

Helispot 4 - N 37 16.232 W 107 29.223 - Well Pad 3

Helispot 5 - N 37 16.425 W 107 28.380 - Well Pad 4

Helibase - N 37 14.425 W 107 32.463 - Sauls Creek Forest RD 528

See Attached Map

The fourth option is to care for and protect the injured person(s) while emergency services respond onsite to extract and transport the injured. Send personnel to meet and lead emergency services to the site.

The Yellow Jacket Prescribed Fire project is located in La Plata and Archuleta Countys, 15 miles East of Bayfield, Colorado. Individual from the burn project will be sent to Hwy 160 at: USFS RD 743 Yellow Jacket Relay Station RD N 37 15.793 W 107 27.062 or intersection of HWY 160 and USFS RD 526

N 37 14.724 W 107 34.390.

E. Emergency Facilities

| EMERGENCY TRANSPORTATION | | | | | | | | | |
|--------------------------------------|---|---|---|----------------|-----------------|-----|-------|-------------|----|
| NAME | | TELEPHONE | LOCATION | | | | | PARAMEDICS | |
| | | 13321101(2 | | | | | | YES | NO |
| Flight For Life | | 800-332-3123 or 720-321- 3900 (Dispatch) | 1010 Three Springs Blvd Durango, CO | | | | | X | |
| Tri-State Care Flight | | 800-800- 0900 (Dispatch) 970-382- 7790 (Office) | Durango Base 1934 E. 2 nd Ave Durango, CO. | | | | | X | |
| Air Care 800-45 | | 800-452- 9990 | Farming | X | | | | | |
| St Mary's Air Life | | 800-332- 4932 | Grand Junction, CO | | | | | X | |
| HELISPOT CLOSEST TO PROJECT | | LAT. | LONG. | | | | | | |
| | | HOSPITALS | & MEDIC | CAL FACI | LITIES | | | | |
| | ADDRES | S AND LATITUDE | | L TIME IIN) | DVIONE | НЕ | LIPAD | BURN CENTER | |
| NAME | AND LONGITUDE | | AIR | GROUND | PHONE | YES | NO | YES | NO |
| Mercy Medical Center | 1010 Three Springs Blvd Durango, CO 37 14.166 x 107 49.654 | | 10 | 30 | 970-247 4311 | X | | | X |
| San Juan Regional | 801 W Maple St. Farmington, NM 36 43.461 x 108 13.084 | | 40 | 120 | 505-325 5011 | - X | | | X |
| University of Colorado Hospital | 12605 E 16 th Ave Aurora, CO 80045 39 44'31.6" x 104 50'33.5" | | 120 | 360 | 720-848 0747 | - X | | X | |
| University of New Mexico | 2211 Lomas Blvd NE Albuquerque, NM 35 5.266 x 106 37.100 | | 70 | 220 | 505-272 2111 | X | | X | |
| University of Utah Medical Center | 50 North Medical Drive Salt Lake City, Utah 40°46.01 x 111°50.19 | | 150 | 430 | 801-581 2121 | X | | X | |
| St Mary's Hospital | Grand Ju | 7 th Street unction, CO 2 X 108° 33.74 | 100 | 285 | 970-244 2273 | X | | | X |

Element 14: Test Fire

A. Test Fire Provisions and Planned Location

The test fire must be ignited in a representative location and in an area that can be easily controlled. The purpose of the test fire is to verify that the prescribed fire behavior characteristics will meet management objectives and to verify predicted smoke dispersion. In many applications, analysis of the initial ignitions may provide adequate test fire results. On multiple-day projects, evaluation of current active fire behavior, in lieu of a test fire, may provide a comparative basis for continuing and must be documented. If in doubt however, initiate a separate test fire and evaluate results.

Pre-operational test fire - Optional

In addition to the above requirements of a test fire, a supplemental pre-operational test fire will be allowed under this burn plan whereas reasoning, requirements and conditions will be described as follows. A pre-operational test fire can be defined as a test fire that takes place 1-3 days prior to full project implementation and is not greater than ½ acre in size. The objective of a pre-operational test fire is to properly evaluate fuel and fire behavior conditions at a representative location and time of day. Lessons learned outlined in element 14 of the 2013 Interagency Prescribed Fire Planning and Implementation Procedures Guide clearly state that "Test fires ignited early in the day can sometimes lead a burn boss to under predict fire behavior in the afternoon" as well as "Test fires conducted in locations that were in cooler or moister locations, or in fuels with a different kind of fire behavior than the prescribed fire area, yielded misleading results (for example, fire behavior was lower: lower flame lengths or rate of spread (or both))". In short, by conducting a pre-operational test fire the burn boss will obtain critical information necessary to make an informed decision including: 1) whether or not resource/prescribed fire objectives will be met 2) an advantage of knowing ahead of time whether or not to order prescribed fire resources for full implementation.

The pre-operational test fire for Yellow Jacket will meet the main test fire criteria stated above with additional criteria.

Located and ignited where it can be easily suppressed.

In a representative location with regard to fuel, weather and topography.

Organization required for the pre-operational test fire: RXB2 (1), FIRB (1), Single Resource Holding Boss (1), 2 Type 6 Engines with 2 personnel minimum. A total of 7 persons will be required with proper qualifications.

Meet requirements of both Agency Administrator Ignition Authorization and Prescribed Fire GO/NO-GO Checklist.

B. Test Fire Documentation

| Location: | | | | |
|----------------------------|----------------------------|------|----|--|
| | | | | |
| Date and Time: | | | | |
| | Weather/Fuels Condit | ions | | |
| | | | | |
| Cloud Cover % | | | | |
| Temperature | | | | |
| Relative Humidity | | | | |
| Fine Dead Fuel Moisture | | | | |
| Wind Speed | | | | |
| Fuels | | | | |
| | | | | |
| | Test Fire Results | | | |
| Flame Length | | | | |
| Rate of Spread | | | | |
| Smoke Dispersion | | | | |
| Other | | | | |
| | | | | |
| The test fire meets the | ne prescription parameters | Yes | No | |

Element 15: Ignition Plan

A. Firing Methods & Devices

Ground and Aerial will be used for the Yellow Jacket Rx.

- Helicopter with PSD unit
- Helicopter with Heli-torch unit
- Drip Torches
- Remote firing devices/guns

B. Ignition Techniques, Patterns, & Sequences

Blackline Ground Ignition:

Blackline operations will be implemented by ground crews. Ground ignitions for both units 1 and 2 will begin at a safe anchor point on the highest point and downwind side of each unit. Strips will proceed generally downhill and into the wind building depth of 500 feet from the control lines.

Aerial Ignitions operations:

The firing boss will begin aerial ignitions after all blackline operations are far enough ahead to identify the boundaries of the units and provide safety of the ground personnel. Ground ignition crews will stay ahead of the aerial ignition operation. Strip head firing or dot firing will be utilized to bring fire down through each unit. This may need to be in a general backing fashion to minimize impacts to the residual stand.

The Ignition Specialist and Holding Specialist functions are expected to work closely together to see that the ignition pattern and sequence do not present concern for control of the burn. The (wind or slope and aspect) should be the dominant influence for fire behavior and the primary factor in establishing the ignition pattern and sequence for the unit. Flame length and intensity will dictate ignition technique and strip width

The distance between ignition lines or points and the sequence of igniting them is determined by weather, fuel, topography, ignition technique, and other factors which influence fire behavior and fire effects will discussed and altered to achieve the fire effects wanted for a successful operation.

C. Ignition Staffing

Minimum capabilities needed for ignition are identified under Element 11 - Organization and Equipment. The Ignition Specialist function will be held at the (ICS position) level based on complexity of burn and ignition operation.

- Blackline operations: Number of ignition personnel will be determined by the Burn Boss and will follow the needs discussed in element 11 (Organization and Equipment).
- Aerial Ignition Operations: Aerial Ignition Staffing will be in accordance with policy set forth in the Interagency Aerial Ignition Guide.

Element 16: Holding Plan

A. General Procedures for Holding

A minimum of 2 type 6 engines and 20 firefighters with ATV/UTV access will patrol roads adjacent to burn units during firing. Holding resources will check lines before firing occurs to ensure lines are clear of debris and all ladder fuels and snags have mitigated as needed. Holding resources will observe fire behavior and report any spots outside the line to the holding boss. Holding boss will notify the burn boss if firing needs to stop or if firing crew needs to assist in holding.

Closest water source is a stock pond located on the north end of units 1 and 2; access is the Hayden Creek RD. N 37 16.340 W 107 29.389

B. Critical Holding Points and Actions

UNIT 1

- South side of unit 1 transitions from good road access to hand line that is passable by ATV/UTV, diligent patrol efforts will need to be maintained. Consider hoselays with portable tanks to store water, and or UTV with water capability.
- West side of unit 1 borders the Sauls Creek RX implemented in 2011 through 2014 so any escape will have reduced fire behavior. Good road access will allow engines type 6 or larger to patrol.
- North side unit 1 consists of the Lang Canyon trail which is passable by ATV/UTV, diligent patrol efforts will need to be maintained. Consider hoselays with portable tanks to store water, and or UTV with water capability.
- East side of unit 1 is bordered with a split between the Lang canyon trail and the Hayden Creek Rd. Good road access on the Hayden Creek road will allow for type 6 engines or larger patrol, the remaining trail is ATV/UTV passable Consider hoselays with portable tanks to store water, and or UTV with water capability for this section. This section of control line is the divider between units 1 and 2.

UNIT 2

- South side of unit 2 starts at the communication site which is a very suitable staging area. Sprinklers will need to be set up to mitigate the value of the communication site, continuing to the south and west will need to be patrolled by both ATV/UTV and firefighters on foot do to some steep slopes. Diligent patrol efforts will need to be maintained. Consider hoselays with portable tanks to store water, and or UTV with water capability.
- West side of unit 2 is bordered with a split between the Lang canyon trail and the Hayden Creek Rd. Good road access on the Hayden Creek road will allow for type 6 engines or larger patrol, the remaining trail is ATV/UTV passable Consider hoselays with portable tanks to store water, and or UTV with water capability for this section. This section of control line is the divider between units 1 and 2.
- North side of unit 2 consists of the Hayden Creek RD allowing for type 6 or larger engines to patrol.
- East side of unit 2 consists of a ¾ mile section of handline that will need to be patrolled by firefighters on foot do to the steepness of the slope. The reminder of the east side is ATV/UTV accessible. Diligent patrol efforts will need to be maintained. Consider hoselays with portable tanks to store water, and or UTV with water capability.

C. Minimum Organization or Capabilities Needed

Minimum capabilities needed for holding are identified under Element 11 - Organization and Equipment. The Holding Specialist function will be held at the (ICS position) level based on complexity of burn and holding operation. On burn day and subsequent days of the prescribed fire, a mix of the number and kinds of hand crews and engines may be modified as long as stated production capabilities are not compromised. As the prescribed fire progresses from ignition to holding to mop up and patrol, specified capabilities and/or types of resources may be adjusted.

Different organizations may be identified for different phases of implementation (i.e. holding v. mopup and patrol, different ignition operations, different prescriptions). If flexibilities are built into the Prescribed Fire Plan, there must be a clear statement as to the work capability requirements of the resources at the various stages of the prescribed fire.

D. Mop-up and Patrol

The prescribed fire burn boss will determine resource needs for mop up based on current and expected fire behavior and weather and assign resources accordingly.

Documentation needs to be completed on a daily basis until the fire is declared out, and included in the final project file.

Element 17: Contingency Plan

A. Trigger Points

On a burn day trigger points will be set by the Burn boss and communicated to all personnel in the daily briefing. Trigger point factors to be considered include: wind speed and direction, relative humidity, fine dead fuel moisture and probability of ignition, frequency of torching and spot fires, and smoke impacts to sensitive areas. Most of these factors relate directly to the environmental prescription and can be used as a guideline for trigger points but ultimate discretion is left to the burn boss. The burn boss will give strong consideration for trigger points related to smoke impacts affecting roadways and/or communities and any slop-overs or spot fires outside the project area that may threaten private property.

B. Actions Needed

If the contingency actions are successful at bringing the project back within the scope of the Prescribed Fire Plan, the project may continue, If contingency actions are not successful by the end of the next burning period, then the prescribed fire will be converted to a wildfire.

1. Contingency Plan for Going Out of Prescription at Low End:

(**Low End** = Minimum Conditions for Burning, i.e. High RH, High Fuel Moisture, Low Temperatures, etc.)

Ignitions will stop when and where it is safe if the project is out of prescription at the low end and objectives are not being met. Construction of new control lines and mopup may be necessary to reduce smoke production and manage patrolling of the ignited block.

2. Contingency Plan for Going Out of Prescription at High End:

(**High End** = Maximum Conditions for Burning i.e. Low RH, Low Fuel Moisture, High Temperatures, Winds, etc.)

The burn boss should make all efforts to monitor weather and fire behavior to avoid compromising prescriptions. Should the high-end prescriptions be met, firing will cease and all lighters will immediately become holders. Mop-up tactics or check line construction may be utilized if the burn boss feels that the high-end conditions will become long term. Depending on current and expected conditions, burn boss may contact dispatch for more resources to assist in monitoring and holding to mitigate an escaped fire potential. These resources may include, but are not limited to, contingency resources and other available resources.

C. Additional Resources and Maximum Response Time(s)

| Agency & Location | Maximum Response | | nation of bility* |
|-------------------|---------------------|--|--|
| Ç Ç | Time | Yes/No | Date |
| | 2.0 Hours | | |
| | 2.0 Hours | | |
| | 4.0 Hours | | |
| | 3.0 Hours | | |
| | 0-24Hours | | |
| | | | |
| | Agency & Location | Agency & Location Response Time 2.0 Hours 2.0 Hours 4.0 Hours 3.0 Hours | Agency & Location Response Time Yes/No 2.0 Hours 2.0 Hours 4.0 Hours 3.0 Hours |

* To be completed within one day of the burn and adjusted during course of extended burning conditions.

The minimum contingency resources needed to implement project is 2 Type 6 Engines and one 20 person crew. The maximum response time allowed for either crew will be 12 hours. Resources were determined using local fire knowledge and production rates for an anticipated spot fire outside of the unit using behave plus when fire is at or outside of prescription on the high range. Dispatch will be contacted prior to implementation to ensure that the contingency resource is available.

Every effort will be made to identify unique contingency resources for the Yellow Jacket Rx, if the same contingency resources are identified for multiple prescribed fire projects within the Forest, the Rx manager, Rx burn boss, and line officer must evaluate and document adequacy of all contingency resources within the area. This evaluation must consider:

- Local, current, and predicted fire danger
- Local and regional wildland fire activities.
- Other Resources.

Once a contingency resource is committed to a specific wildland fire action (wildfire, wildland fire use or prescribed fire), it can no longer be considered a contingency resource for another prescribed fire project and a suitable replacement contingency resource must be identified or the ignition halted. The Agency Administrator will determine if and when they are to be notified that contingency actions are being taken. If the contingency actions are successful at bringing the project back within the scope of the Prescribed Fire Plan, the project may continue. If contingency actions are not successful by the end of the next burning period, then the prescribed fire will be converted to a wildfire.

Element 18: Wildfire Declaration

A. Wildfire Declared By

The Prescribed Fire Burn Boss will have the authority to declare the prescribed fire a wildfire. If any of the following situations occur, the burn will be declared a wildfire, initial attack will occur, and appropriate management response will take place.

- 1. Contingency actions have failed or are likely to fail and cannot be mitigated.
- 2. Fire outside of the project area.
- 3. Costs for control exceed available project funds.

Prescribed Fire Burn Boss determines that the contingency actions have failed or are likely to fail and cannot be mitigated by the end of the next burning period. A prescribed fire must be declared a wildfire when the fire has spread outside the project boundary, or is likely to do so, and cannot be contained by the end of the next burning period. A prescribed fire can be converted to a wildfire for reasons other than an escape.

A prescribed fire declared a wildfire cannot be returned to prescribed fire status until the appropriate level of review. When a prescribed fire is declared a wildfire, managers still have the full range of fire management options available based on Land Use Plan (LUP) and Fire Management Plan (FMP) objectives. If a prescribed fire is declared a wildfire, a wildfire number will be assigned and all wildfire management costs will be charged to that number.

B. IC Assignment

Should a wildfire be declared, the Prescribed Fire Burn Boss will become the Incident Commander until relieved or replaced. The IC will organize all on-site resources for a safe and aggressive response. Personnel within the prescribed fire organization will transition into ICS wildfire positions they are qualified to carry out. The IC will order additional suppression resources identified in the Contingency Plan as well as any other required resources necessary to support the suppression effort.

Upon a wildfire conversion occurring, all overhead personnel will begin to document actions taken prior to wildfire conversion and subsequent actions on a Unit Log. After the incident is contained, the Prescribed Fire Burn Boss will submit a post fire report documenting weather, resources on site, ignition operations, holding actions, and other pertinent data. All prescribed fires declared a wildfire will have a review initiated by the appropriate level Agency Administrator. The level and scope of the review will be determined by agency policy.

C. Notifications

The Prescribed Fire Burn Boss/IC will notify Zone Duty officer who will intern notify the Forest duty officer using Durango Dispatch Center. Zone Duty officer will then notify the Columbine District Ranger and the Regional Fuels Specialist. Durango Dispatch will notify contacts listed on the notification plan of the wildfire and the current situation.

Burn boss will notify regional fire management officer within 24 hours of an escape, threat of an escape, or activation of contingency resources identified in the plan, or any prescribed fire that requires additional resources or operational time not accounted for in the IAP or prescribed fire plan.

D. Extended Attack Actions and Opportunities to Aid in Fire Suppression

Ignition will cease upon notification of fire outside of the primary and secondary units except as needed to secure lines. The appropriate management response will be used in order to flank the fire with suppression resources until the forward rate of spread is stopped. The containment strategy will be to utilize safe anchor points and create direct fire line where feasible and indirect fire line, including burning out, depending upon location of natural barriers and roads. The FMO and/or IC, Resource Advisor, and Agency Administrator may develop a WFDSS, which will determine the appropriate management response to the escaped fire. Use of the Wildland Fire Decision Support System (WFDSS) is required when a wildfire escapes initial attack.

Opportunities to aid in fire suppression include: utilize existing roads in the vicinity of the burn unit, moist drainages, and changes in fuels.

Element 19: Smoke Management and Air Quality

A. Compliance

A smoke permit will be obtained prior to ignition from the Colorado APCD. Conditions of the permit will adhere to (total acres, daily acres, total piles, daily piles, smoke dispersion, and wind direction. The Burn Boss will schedule and manage the burn under conditions when smoke regulations will not be violated

B. Permits to be obtained: A Broadcast Prescribed Fire Permit must be obtained from the Colorado Department of Environmental Quality – Air Quality Control Division.

Smoke Management Number:

The Burn Boss will submit the following forms:

- 1. Form D Notification will be submitted 2-48 hours of ignition.
- 2. From E Daily Actual Fire Activity will be submitted by 1000 the day following ignition.

C. Smoke Sensitive Receptors

Identify any non-attainment or Class I airsheds within 15 miles:

Weminuche Wilderness Area (Class 1 Airshed).

| Receptor | Direction | Distance | Receptor | Direction | Distance |
|----------------------|-----------|----------|----------|-----------|----------|
| Bayfield | West | 4 miles | | | |
| Weminuche Wilderness | North | 12 miles | | | |

D. Potentially Impacted Areas

Smoke impacts maybe felt in the town of Bayfield but impacts from smoke should be minimal. Smoke may impact individual rural residences along Beaver Creek. Deer Valley subdivision which is located in close proximity to the Yellow Jacket prescribed burn.

- 1. The Town of Bayfield is located 4 plus miles west of the burn units. Daytime smoke impacts should be minimal with the acceptable wind directions. Nighttime impacts are unlikely.
- **2.** U.S. Highway 160 is between one half and three miles north and west of the burn units. The highway could receive smoke impacts depending upon the unit being burned and wind direction.
- **3.** The Weminuche Wilderness Area, a Class 1 air shed is located 12 miles north of the project area. It is unlikely to receive significant daytime impacts and should not receive any nighttime impacts.

E. Mitigation Strategies and Techniques to Reduce Smoke Impacts

- . In the event of unacceptable smoke impacts as indicated by visibility on the highway, or significant smoke within the town of Bayfield, one of two options will occur at the discretion of the Burn Boss.
 - 1. Cease lighting until smoke dispersal conditions improve. If smoke conditions do not improve, lines will be constructed to halt fire spread and heavier fuels will be mopped up where feasible. As an alternative to mopping up of larger fuels, especially in the interior of the unit and when larger fuels are very dry, they may be bone piled and allowed to burn up quickly.
 - 2. Finish burning the unit as quickly as possible and begin mop-up or bone piling operations on larger fuels to reduce nighttime smoke impacts. The decision of whether to halt ignition, construct lines, mop-up or bone pile will be based on which option(s) will be the easiest to implement based on time of day and number of personnel on the burn and minimizing smoke impact.
 - 3. By following the prescribed synoptic weather conditions, we should experience good smoke dispersion during the daytime hours. A fair or better prediction is required before aerial burning. Smoke should rise and disperse so that no visibility impacts are experienced, This project is adjacent to Sauls Creek Rx implemented fall 2014 where smoke impacts to visibility where no issues. To be sure, the burn boss will appoint a smoke monitor who will periodically travel the highway and determine if visibility is compromised. If it is, then the Colorado State patrol will be notified and appropriate measures taken which could include, a reduction in traffic speed or closure of the highway. Firing would cease at this point. From experience burning in this area, highway visibility problems are unlikely.
 - 4. Electronic signs will be posted on HWY 160 for both East and west bound traffic prior and post ignition.

Element 20: Monitoring

A. Fuels Information (forecast and observed) Required and Procedures

Prescribed fire monitoring is the collection and analysis of repeated observations or measurements to evaluate changes in condition and progress toward meeting a management objective. 10 hour fuel sticks will be placed on the ground and suspended at representative sites within the Burn Area. Sticks will be weighed on each day of burning. One-hour fuel moistures will be calculated from fire weather data.

B. Weather Monitoring Required and Procedures

Weather will be taken at least every hour, occasionally more frequently during burning operations. Temperature, relative humidity, wind speed and direction and sky conditions will be recorded and broadcast over tactical channels for all personnel on the fire. One-hour fuel moisture will be calculated from weather and site data and recorded.

C. Fire Behavior Monitoring Required and Procedures

Fire behavior observations will be made by the Fire Effects Monitor (FEMO). Flame length (FL) and rate of spread (ROS) will be observed and recorded to correspond with weather observations for each fuel type during the day. Other fire behavior observations may include residence time and torching.

D. Monitoring Required to Ensure Prescribed Fire Plan Objectives are Met

Formal and informal post burn monitoring will be conducted according to the District Fuels Monitoring Program. As a minimum, the Burn Boss and Resource Specialists will conduct a field trip of burned units to observe effectiveness of burn and achievement of objectives.

E. Smoke Dispersal Monitoring Required and Procedures

A smoke monitor will observe the height and shape of the column, direction of smoke travel and whether any sensitive receptors are being impacted.

Element 21: Post-burn Activities

Post-Burn Activities that Must be Completed

Each operational shift on a prescribed fire should have an informal After Action Review (AAR). The Prescribed Fire Burn Boss will insure the Prescribed Fire Post Burn Evaluation is completed Colorado Department of Public Health, **Form D** – Daily Activity Report must be submitted by 08:00 on the day following the burn. https://www.colorado.gov/pacific/cdphe/smoke-management-permits The Weather/Fuels/Fire Behavior/Smoke Observations (Appendix F) will be collected and placed into the project folder. Any additional Fire Effects Reports will be completed and placed in the project folder.

A post burn evaluation and summary that documents burn day weather, fuel conditions, fire behavior, problems and concerns is required. The report must also indicate if objectives were met and make recommendations for future projects. The prescribed fire results must be compared to the fire treatment objectives and resource objectives that were identified for the project.

Prescribed Fire Plan Appendices

Appendix A: Maps: Vicinity, Project or Ignition Units (or both), Optional: Significant or Sensitive Features, Fuels or Fuel Model, Smoke Impact Areas

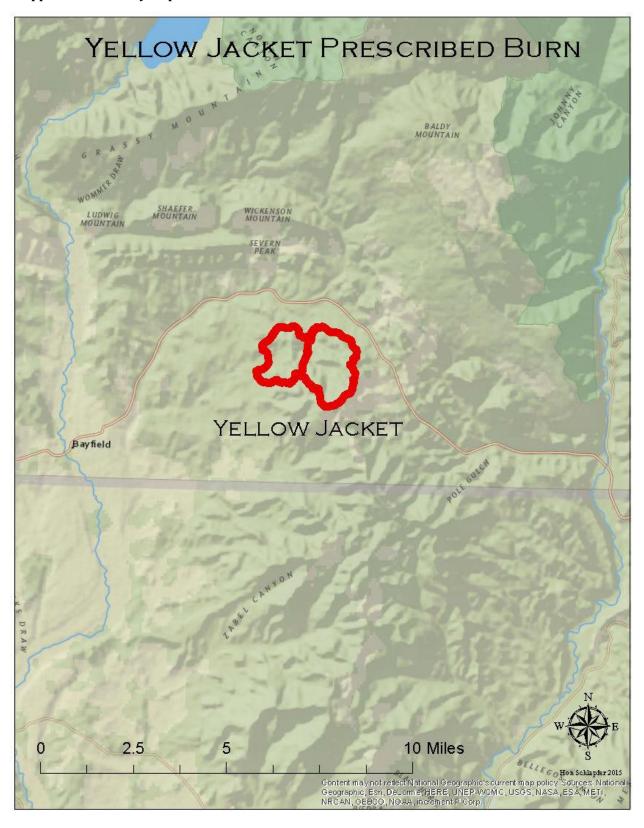
Appendix B: Technical Reviewer Checklist

Appendix C: Complexity Analysis

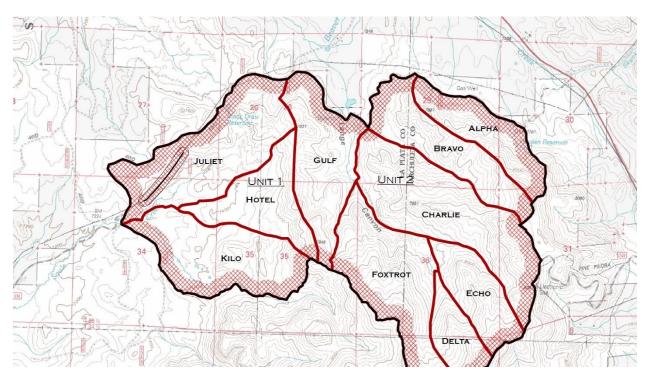
Appendix D: Agency-Specific Job Hazard Analysis or Risk Assessment

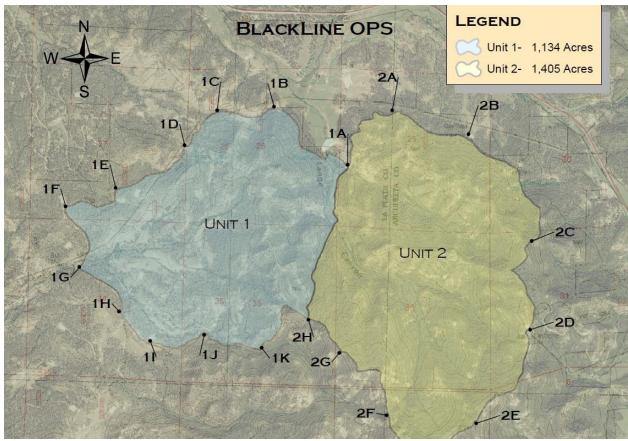
Appendix E: Fire Behavior Modeling Documentation or Empirical Documentation

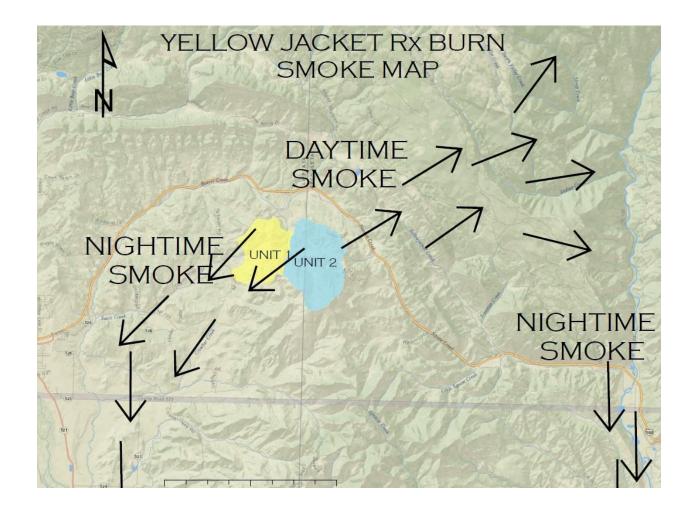
Appendix F: Smoke Management Plan and Smoke Modeling Documentation (Optional)

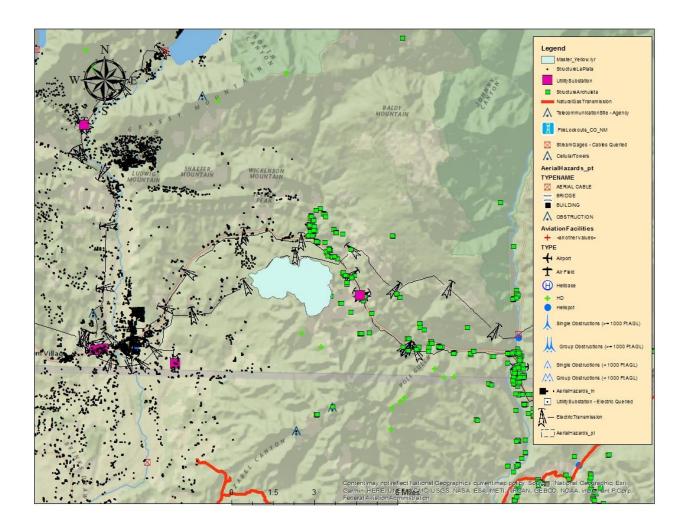


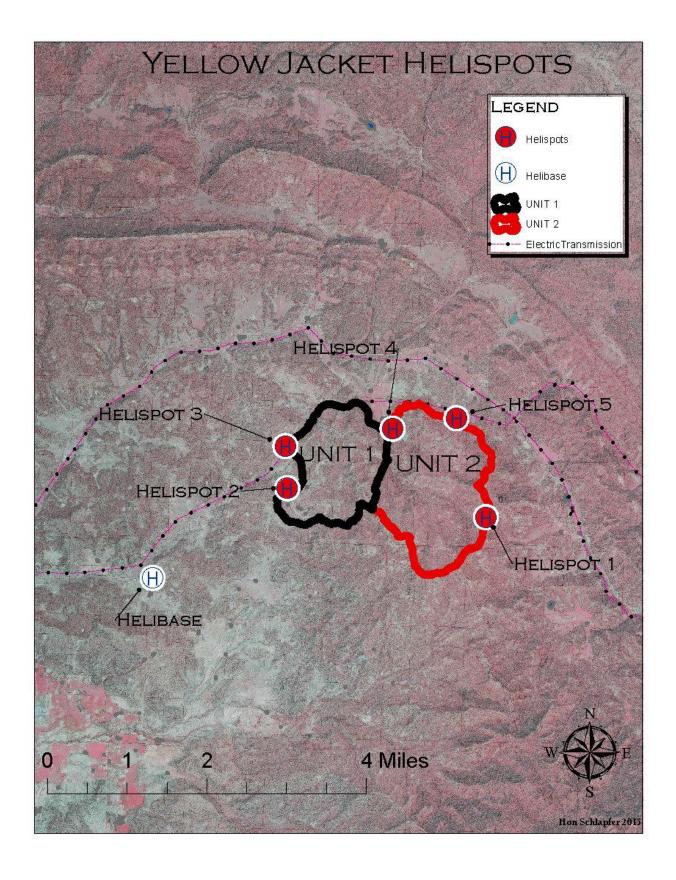
PSD Operations











Appendix B: Technical Reviewer Checklist

Fill out this checklist based on the guidance provided in the Technical Review section in the *Interagency Prescribed Fire Planning and Implementation Procedures Guide*, PMS 484.

Rate each element in the following table with an "S" for Satisfactory or "U" for Unsatisfactory. Use Comment field as needed to support the element rating.

| PRESCRIBED FIRE PLAN ELEMENTS | RATING | COMMENTS |
|--|----------------|-----------------------------------|
| 1. Signature page | | |
| 2. A. Agency Administrator Ignition Authorization | | |
| 2. B. Prescribed Fire GO/NO-GO Checklist | | |
| 3. Complexity Analysis Summary | | |
| 4. Description of Prescribed Fire Area | | |
| 5. Objectives | | |
| 6. Funding | | |
| 7. Prescription: Prescription Narrative and Prescription Parameters | | |
| 8. Scheduling | | |
| 9. Pre-Burn Considerations and Weather | | |
| 10. Briefing | | |
| 11. Organization and Equipment | | |
| 12. Communication | | |
| 13. Public and Personnel Safety, Medical | | |
| 14. Test Fire | | |
| 15. Ignition Plan | | |
| 16. Holding Plan | | |
| 17. Contingency Plan | | |
| 18. Wildfire Declaration | | |
| 19. Smoke Management and Air Quality | | |
| 20. Monitoring | | |
| 21. Post-Burn Activities | | |
| Appendix A: Maps | | |
| Appendix C: Complexity Analysis | | |
| Appendix D: Agency-Specific Job Hazard Analysis or Risk Assessment | | |
| Appendix E: Fire Behavior Modeling Documentation or Empirical | | |
| Documentation | | |
| Appendix F: Smoke Management Plan and Smoke Modeling | | |
| Documentation (Optional) Other | | |
| Approval is recommended subject to the completion of all requirem Prescribed Fire Plan. | ents listed in | n the comments section, or on the |
| Recommendation for approval is not granted. Prescribed fire plan | n should be r | e-submitted for technical review |
| subject to the completion of all requirements listed in the comments Technical Reviewer Signature: | | |
| Qualification and Currency: | | |
| Date Signed: | | |

Appendix C: Complexity Analysis

Please refer to Element 3: Complexity Analysis Summary in the *Interagency Prescribed Fire Planning and Implementation Procedures Guide*, PMS 484, and the procedures in *the Prescribed Fire Complexity Analysis Rating System Guide*, PMS 424, to fill out this appendix.

This analysis is designed to be used with the NWCG Prescribed Fire Complexity Rating System Guide (PMS 424 - January 2004) and Prescribed Fire Complexity Rating Descriptors starting on Page 6 of the guide http://www.nwcg.gov/pms/RxFire/complexity_analysis.pdf.

An initial complexity rating should be completed during the project development stage to identify items needing mitigation. These items can then be addressed during the development of the Prescribed Fire Plan. When doing the complexity rating, be sure to consider areas outside of the project boundaries that could be impacted by smoke or an escaped. Once the Prescribed Fire Plan is near completion, the final complexity rating is made providing justifications for changes and any mitigating actions resulting in change. Select rating level and delete remaining ratings for both the preliminary and final ratings (do not highlight as when printed in black and white, rating level is unknown). Entire complexity element should be on one page (not split between multiple pages),

The final rating should be entered on the Complexity Elements Summary and cover page of the Prescribed Fire Plan. The mitigating measures identified in the plan should be noted in the rationale for the Complexity Analysis Summary. All complexity elements with a rating of high should be highlighted in the management summary.

| PREPARED BY | Hon Schlapfer | DATE | 3/26/18 |
|-------------|----------------------|------|---------|
| APPROVED BY | | DATE | |
| APPROVED BY | Agency Administrator | DATE | |
| | Agency Administrator | | |

Complexity Elements

1. Potential for Escape

| Risk | | | Rationale |
|--------------------------------------|-------------------------------------|-------------|---|
| Prelimina | ary Rating | | Many of the units are located in rugged terrain with moderate to heavy |
| Low | Moderate | High | fuel loads. Most units are first entry Rx and composed of short needle |
| | | | conifer on the north slopes, ponderosa pine on the south slopes, and a mix |
| | | | of aspen and high density gamble oak through the remainder of the units. |
| Final Rat | ting | | In areas with anticipated control problems fire techniques (500 foot |
| Low | <mark>Moderate</mark> | High | blackline) and or holding resources will adjust accordingly to lessen the |
| | | | potential for escapes. On scene resources produce more chains per hour |
| | | | than predicted fire behavior |
| | | | |
| Potentia | l Consequenc | ces | Rationale |
| | al Consequence ary Rating | ces | Rationale The entire northern boundary of the project is bordered by private land |
| Prelimina | _ | ces High | |
| Prelimina | ary Rating | | The entire northern boundary of the project is bordered by private land |
| Prelimina | ary Rating <mark>Moderate</mark> | | The entire northern boundary of the project is bordered by private land and low density structures including primary residences and out |
| Prelimina Low Final Rat | ary Rating <mark>Moderate</mark> | | The entire northern boundary of the project is bordered by private land and low density structures including primary residences and out buildings. |
| Prelimina Low Final Rat Low | ary Rating Moderate ting | High | The entire northern boundary of the project is bordered by private land and low density structures including primary residences and out buildings. |
| Prelimina Low Final Rat Low Technica | ary Rating Moderate ting Moderate | High | The entire northern boundary of the project is bordered by private land and low density structures including primary residences and out buildings. No change |

| Final Ra | ating | | Holding resources will be in place prior to ignition. The use of type 3 |
|----------|-----------------|--------|---|
| Low | <u>Moderate</u> | e High | helicopter with bucket may aid in a faster response of detecting and |
| | | | slowing of any spots outside of control lines. |

2. The Number and Dependency of Activities

| | 2. The Number and Dependency of Metivities |
|---|---|
| Risk | Rationale |
| Preliminary Rating Low Moderate High | Due to the size of the burn units and being located in steep rugged terrain many simultaneous actions will need to occur for a successful burn. Some of these activities include aerial ignition (PSD or heli-torch), ground ignition, fuel shuttles, fire monitoring, smoke monitoring, etc |
| Final Rating Low Moderate Hi | This is a planned event time will be taken to account for all the logistics to take place. Adequate personnel will be assigned to accomplish said tasked |
| Potential Consequences | Rationale |
| Preliminary Rating Low Moderate His | Delays may be caused by tightly coupled operational requirements. The consequences fall into the moderate category no tight restrictions on timing or implementation. |
| Final Rating Low <mark>Moderate</mark> Hi | No change gh |
| Technical Difficulty | Rationale |
| Preliminary Rating Low Moderate Hi | Coordination of multiple activities will be accomplished thru adhering to the ICS core principles or 3-7 direct reports for supervision and span of control. Using fully qualified personal familiar with aviation operations, ground ignitions, and prescribed fire in remote locations will be key for the success of the operations. |
| Final Rating Low Moderate Hi | Coordination of ignition activities and constant communication between |

3. Off-Site Values

| Risk | Rationale |
|---------------------------------------|--|
| Preliminary Rating Low Moderate High | Low density primary residences occupy the northern boundary of the project to the north. Several "critical infrastructure" power lines, oil and gas roads, oil and gas pads, US Highway 160, Yellow jacket Communications site, all are located around and off site of the prescribed burn area. |
| Final Rating Low Moderate High | With proper planning, public outreach, and monitoring of weather and indices a qualified RXB2 should be able to adequately mitigate these risk to a moderate level |
| Potential Consequences | Rationale |
| Preliminary Rating Low Moderate High | Impacts to any of these areas or "critical infrastructure" could have moderate to severe consequences for the surrounding communities, residences, and could result in a loss of "services" to customers is a facility or Highway is impacted. |
| Final Rating Low Moderate High | With proper planning, public outreach, and monitoring of weather and indices a qualified RXB2 should be able to adequately mitigate these risk to a moderate level |
| Technical Difficulty | Rationale |
| Preliminary Rating Low Moderate High | Many of the offsite values are readily defendable and located far enough away from the burn units that the difficulty of protecting them should be manageable with adequate preparation time, thorough briefings, and accurate and detailed mapping of areas of concern. |
| Final Rating Low Moderate High | No change |

4. On-Site Values

| | 4. On-bite values |
|--------------------------------|--|
| Risk | Rationale |
| Preliminary Rating | A critical "Transmition or KV" line is located within the planning area of |
| Low Moderate High | the proposed prescribed fire. The remainders of the onsite values are |
| | based on recreation use, oil and gas, low value timber, and dispersed |
| | camping sites. Some fences (wooden and metal) are located within burn |
| | units and will need prep work. |
| Final Rating | Burning within prescription windows with resource production rates that |
| Low <mark>Moderate</mark> High | exceed predicted fire behavior, and prep work done before ignitions will |
| | mitigate this risk to moderate. |
| Potential Consequences | Rationale |
| Preliminary Rating | Disruption of service due to an impact to the "KV" line may have severe |
| Low Moderate <mark>High</mark> | impacts to communities located "downstream". |
| Final Rating | No change |
| Low Moderate <mark>High</mark> | |
| Technical Difficulty | Rationale |
| Preliminary Rating | Adequate preparation will be utilized to mitigate issues with the onsite |
| Low <mark>Moderate</mark> High | values. |
| Final Rating | More than adequate personnel will be on scene and all on onsite values |
| Low <mark>Moderate</mark> High | will be mitigated. |

5. Fire Behavior

| | | 5. Fire behavior |
|--|------|---|
| Risk | | Rationale |
| Preliminary Rating Low Moderate | High | Fire behavior prescriptions will be developed and documented to ensure adequate accomplishment of burn objectives will be met. Areas of high intensity and severity fire will be required to meet objectives. Other areas of low intensity fire will adequately meet objectives. Analysis will be attached documenting the desired fire effects and the locations of those effects. |
| Final Rating Low Moderate | High | Fire behavior prescription was written with windows of opportunity to meet objectives on both high and low fire intensity's. Columbine RD has had success with these prescriptions. |
| Potential Consequence | ces | Rationale |
| Preliminary Rating Low Moderate | High | The majority of the project area has not seen a regular fire return interval due to fire suppression efforts dating back to the early 1900's. Some prescribed fire has been applied to the landscape in small sections. Adequate fire behavior prescriptions will be developed utilizing both point ignition and spatial modeling. |
| Final Rating | | Fire prescriptions are written to achieve these goals. |
| Low Moderate | High | |
| Technical Difficulty | | Rationale |
| Preliminary Rating Low Moderate | High | Utilizing "best available science" and previous experience applying fire to the local landscape will be used to mitigate fire behavior and fire effects objectives. |
| Final Rating Low Moderate | High | Through the use of monitoring of adjacent burn projects we have a solid background for the weather windows, fuel moistures, and fire prescriptions needed to achieve fire effects objectives. |

6. Management Organization

| Risk | Rationale |
|--------------------------------|--|
| Preliminary Rating | Utilizing standard ICS span of control and NWCG (310-1 & 5109.17) |
| Low <mark>Moderate</mark> High | guidelines for incident qualifications the appropriate management organization will be developed based on the operations required. Aerial operations and simultaneous ground |

| Final Rating | All policy will be followed for both ground and Aerial ignitions. |
|--------------------------------|--|
| Low <mark>Moderate</mark> High | |
| Potential Consequences | Rationale |
| Preliminary Rating | If adequate oversight and management structure are not utilized the |
| Low Moderate High | consequences will be undesirable resulting in unnecessary acceptance of an increased level of risk. |
| Final Rating | Ensure all personnel are qualified for their position. Eliminated non- |
| Low <mark>Moderate</mark> High | essential personnel from the area of helicopter operations. Ensure communication between Pilot, Firing Boss, and PSD Operator is maintained and has a back-up. This is accomplished through briefings and span of control. |
| Technical Difficulty | Rationale |
| Preliminary Rating | By following agency requirements and FSM's the difficulty of |
| <mark>Low</mark> Moderate High | developing a proper management organization is low. |
| Final Rating | Overhead and other personnel will be located and committed in advance |
| <mark>Low</mark> Moderate High | of potential burn windows. |

7. Public and Political Interest

| Risk | Rationale | | |
|--|--|--|--|
| Preliminary Rating | Initial public and political interest will be high for the project. Several | | |
| Low Moderate High | undesirable outcomes from prescribed fire in the past decade have | | |
| | increased public and political interest in all aspects of wildfire | | |
| | management. In recent years due to a number of factors to include; | | |
| | management turnover, CO state smoke regulations, presidential elections, | | |
| | and drought have limited broadcast burning on the Central Zone. A | | |
| | phased "ramp up" will be required to regain lost skills and confidence | | |
| | from the public to re build the prescribed fire program. | | |
| Final Rating | Heavy public outreach with the use of mailers, newspaper, radio, and | | |
| Low <mark>Moderate</mark> High | field trips including the public has proven to be very successful and that | | |
| | model will be carried forward with this project and projects in the future. | | |
| | | | |
| Potential Consequences | Rationale | | |
| Preliminary Rating | Rationale Public and political backlash from not properly addressing concerns will | | |
| • | | | |
| Preliminary Rating | Public and political backlash from not properly addressing concerns will | | |
| Preliminary Rating Low Moderate High | Public and political backlash from not properly addressing concerns will have severe and long lasting impacts and consequences. | | |
| Preliminary Rating Low Moderate Final Rating | Public and political backlash from not properly addressing concerns will have severe and long lasting impacts and consequences. Media releases will be made in advance of burn windows. A Smoke | | |
| Preliminary Rating Low Moderate Final Rating | Public and political backlash from not properly addressing concerns will have severe and long lasting impacts and consequences. Media releases will be made in advance of burn windows. A Smoke Monitor/PIO who can answer questions from the public will be assigned | | |
| Preliminary Rating Low Moderate High Final Rating Low Moderate High | Public and political backlash from not properly addressing concerns will have severe and long lasting impacts and consequences. Media releases will be made in advance of burn windows. A Smoke Monitor/PIO who can answer questions from the public will be assigned to the burn and located in areas that are easy for the public to access. | | |
| Preliminary Rating Low Moderate High Final Rating Low Moderate High Technical Difficulty | Public and political backlash from not properly addressing concerns will have severe and long lasting impacts and consequences. Media releases will be made in advance of burn windows. A Smoke Monitor/PIO who can answer questions from the public will be assigned to the burn and located in areas that are easy for the public to access. Rationale | | |
| Preliminary Rating Low Moderate Final Rating Low Moderate High Technical Difficulty Preliminary Rating | Public and political backlash from not properly addressing concerns will have severe and long lasting impacts and consequences. Media releases will be made in advance of burn windows. A Smoke Monitor/PIO who can answer questions from the public will be assigned to the burn and located in areas that are easy for the public to access. Rationale Adequate public outreach and notification will be addressed and followed | | |

8. Fire Treatment Objectives

| Risk | Rationale | | |
|-------------------------------|--|--|--|
| Preliminary Rating | Re introducing wildfire into a wildfire dependent ecosystem will be easy | | |
| Low Moderate High | to accomplish while achieving objectives of catastrophic wildfire | | |
| | reduction in the Wildland/Urban Interface (WUI). | | |
| Final Rating | Columbine RD has had great success Re introducing wildfire back into a | | |
| Low Moderate High | wildfire dependent ecosystem. | | |
| | | | |
| Potential Consequences | Rationale | | |
| Preliminary Rating | Rationale Even fire introduce into the WUI that only meets the objectives on the | | |
| | | | |
| Preliminary Rating | Even fire introduce into the WUI that only meets the objectives on the | | |
| Preliminary Rating | Even fire introduce into the WUI that only meets the objectives on the low end will have a positive impact on catastrophic wildfire fire | | |

| Technical Difficulty | | Rationale |
|-----------------------------|------|---|
| Preliminary Rating | | Following the prescribed fire prescription will ensure fuel treatment |
| Low Moderate | High | objective will be met. |
| Final Rating | | Prescribed fire prescriptions are written to allow high intensity where |
| Low Moderate | High | need and low intensity all meeting objectives. |

9. Constraints

| Risk | Rationale | | |
|--------------------------------|---|--|--|
| Preliminary Rating | Some seasonal wildlife limitations and archeological constraints exist, | | |
| Low Moderate High | snags, protection of old growth ponderosa pine within the project area. In | | |
| | addition Colorado State smoke management restraints my hamper or | | |
| | limits "windows" to accomplish the project with minimal risk and an | | |
| | appropriate level of cost per acre. | | |
| Final Rating | Do to the lager burn units the obtaining smoke permits to meet the | | |
| Low Moderate High | windows required will take strong coordination with the state of | | |
| | Colorado. | | |
| Potential Consequences | Rationale | | |
| Preliminary Rating | If constraints and requisite site conditions are not followed potential | | |
| Low Moderate High | consequences may result in loss of archeological sites, wildlife impacts, | | |
| | and violation of State and Federal PM regulations resulting in fines and | | |
| | possible suspension of burning activities on the San Juan NF for a limited | | |
| | time. | | |
| Final Rating | No Change | | |
| Low Moderate High | | | |
| Technical Difficulty | Rationale | | |
| Preliminary Rating | Adherence to FSM's, clearance requirements, and the HD's | | |
| Low Moderate High | w Moderate High Environmental Analysis will be low complexity. Deviation from any | | |
| | the above listed constraints, though tempting, will not be tolerated. | | |
| Final Rating | This project will follow all fire prescriptions as well as smoke permit | | |
| <mark>Low</mark> Moderate High | requirments. | | |

10. Safety

| Risk | Rationale | | | |
|--------------------------------|---|--|--|--|
| Preliminary Rating | Many highly complex and high consequence operations will be required | | | |
| Low Moderate High | to be conducted for a successful operation. Aerial ignition, ground | | | |
| | ignition, mixing fuel, low level flight, remote access in rugged terrain, | | | |
| | W/UI, power lines, snakes, spiders, bear, hunters, etc all present a | | | |
| | potential risk of an adverse outcome. | | | |
| Final Rating | Every opportunity will be taken to mitigate these risks through the use of | | | |
| Low Moderate <mark>High</mark> | daily briefings and after action reviews, and following policy. | | | |
| Potential Consequences | Rationale | | | |
| Preliminary Rating | The potential of an adverse outcome if an "event" occurred is rated as | | | |
| Low Moderate <mark>High</mark> | overall "risk" or likelihood of an event occurring. Loss of life, property, | | | |
| | air craft, critical infrastructure all are present as "hazards" and will need | | | |
| | to be mitigated utilizing the best science available, best safety practices, | | | |
| | and through briefings. | | | |
| Final Rating | No change | | | |
| Low Moderate <mark>High</mark> | | | | |
| Technical Difficulty | Rationale | | | |

| Preliminary Rating | Following agency requirement's, policies, and regulations is standard | | |
|--------------------------|---|--|--|
| Low Moderate High | operating procedure for all professional operators. By using only fully | | |
| | qualified and agency approved trainees in critical positions the difficulty | | |
| | of reducing risk, communicating hazards, and mitigating issues will be | | |
| | low. | | |
| Final Rating | No change | | |
| Low Moderate High | | | |

11. Ignition Procedures/Methods

| Risk | | | Rationale |
|---------|-----------------------|-------|---|
| Prelimi | nary Rating | | Ground ignition "black lining" followed by aerial ignition (both PSD and |
| Low | Moderate | High | Helitorch) will need to be utilized to meet objectives with the lowest |
| | | J | possible level of exposure and risk. |
| Final R | ating | | Following the fire prescriptions and the project aviation safety plan the |
| Low | <mark>Moderate</mark> | High | level of exposure and risk is moderate. |
| Potenti | ial Consequenc | ces | Rationale |
| Prelimi | nary Rating | | If adequate ignition procedures are not briefed and utilized objectives |
| Low | <mark>Moderate</mark> | High | may not be fully met or the project will need to be delayed or re designed. |
| Final R | ating | | Firing methods and procedures must be coordinated to provide for |
| Low | <mark>Moderate</mark> | High | firefighter safety. |
| Techni | cal Difficulty | | Rationale |
| Prelimi | nary Rating | | Nonstandard ignitions methods will not be utilized on this project. The |
| Low | Moderate | High | process of "black lining" the units with ground resources, followed by |
| | | 8 | PSD operations in the Pine/Conifer type, and completion of ignition |
| | | | utilizing a "heli torch" for brush fields and residual unburned interior |
| | | | islands is a standard practice in many areas of the western US and have |
| | | | been conducted on the San Juan NF in past years with great documented |
| | | | . , |
| Einel D | atina | | Success. |
| Final R | - | TT: 1 | No Change |
| Low | Moderate | High | |

12. Interagency Coordination

| Risk | | | Rationale | |
|---------|-----------------|------|---|--|
| Prelimi | nary Rating | | La Plata County Colorado has a reputation of excellent interagency | |
| Low | <u>Moderate</u> | High | coordination. All operations will be conducted following the RXBP | |
| | | Ü | internal and external communication plan. | |
| Final R | ating | | No change. | |
| Low | Moderate | High | | |
| Potenti | al Consequenc | es | Rationale | |
| Prelimi | nary Rating | | A lack of coordination could result in future communications issues with | |
| Low | Moderate | High | our interagency partners and cooperators. | |
| Final R | Final Rating | | With the use of proper outreach which includes La Plata and Archuleta | |
| Low | <u>Moderate</u> | High | Counties there will be proper coordination or the project will not be | |
| | | Ü | implemented. | |
| Techni | cal Difficulty | | Rationale | |
| Prelimi | nary Rating | | Following the RXBP and agency communications protocols for internal | |
| Low | Moderate | High | and external communication is standard practice and will be followed thru | |
| | | 8 | the implementation of the project. | |
| Final R | ating | | No change. | |
| Low | Moderate | High | | |

13. Project Logistics

| Risk | Rationale | | | |
|------|-----------|--|--|--|

| Preliminary Rating | | | Numerous roads, helispots, trails, and natural staging areas exist within | | |
|----------------------|---------------------|------|---|--|--|
| | | | the project area. Fuel shuttling, batch mixing locations, medevac sites, | | |
| | | | and other requisite logistical needs will be addressed specifically in the | | |
| | | | pre-burn considerations and incident action plan. | | |
| Final Rating | | | All helispots, trails, and medivac sites are address in this burn plan and | | |
| Low Mod | <mark>lerate</mark> | High | will be briefed to all burn personnel. | | |
| Potential Con | sequenc | es | Rationale | | |
| Preliminary R | ating | | Failure to address specific logistical needs well in advance of the planned | | |
| Low Mod | <mark>lerate</mark> | High | implementation will result in excess expenditure of tax payer dollars, | | |
| | | | possible increased level of risk, and adverse outcomes. | | |
| Final Rating | | | Time will be taken prior to implementation to address all the logistical | | |
| Low Mod | <mark>lerate</mark> | High | needs required to have a successful operation. | | |
| Technical Dif | fficulty | | Rationale | | |
| Preliminary R | ating | | Prescribed fire is a planned event and adequate time shall be taken to | | |
| Low Mod | derate | High | ensure all issues to include logistical needs are addressed well in advance | | |
| | | | of the operation being implemented. If last minute issues are arising and | | |
| | | | items being missed indicating a reactionary approach the burn shall be | | |
| | | | suspended and a post planning AAR will be conducted by the Zone FMO | | |
| | | | and other requisite staff. | | |
| Final Rating | | | No change | | |
| Low Mod | lerate | High | | | |

14. Smoke Management

| | 8 | |
|--------------------------------|--|--|
| Risk | Rationale | |
| Preliminary Rating | Prescription adherence and following EPA and Colorado State emission | |
| Low Moderate High | regulations and permitting processes are required by Federal Law and will | |
| | not be deviated from. | |
| Final Rating | Project implementation will follow the smoke permit given by the State | |
| <mark>Low</mark> Moderate High | of Colorado. | |
| Potential Consequences | Rationale | |
| Preliminary Rating | Health impacts, fines, degradation of air sheds, degradation of view | |
| Low Moderate High | sheds, resulting in a loss of confidence from the public, forest, and region | |
| | may result in short term to long term suspension of burning activities on | |
| | the unit. | |
| Final Rating | Smoke management is a serious concern for the Columbine Fire program | |
| Low Moderate High | all smoke permits will be followed and taken very seriously. Proper burn | |
| | windows smoke dispersion will be used. Smoke monitors will be in place | |
| | and burning techniques will be used to mitigate any issues if the arise. | |
| Technical Difficulty | Rationale | |
| Preliminary Rating | Follow all mitigations, regulations, State, and Federal Laws while | |
| Low Moderate High | implementing the project. | |
| Final Rating | No change | |
| <mark>Low</mark> Moderate High | | |

Appendix D: Agency-Specific Job Hazard Analysis or Risk Assessment

Please refer to your specific agency guidance to fill out this appendix.

Appendix E: Fire Behavior Modeling Documentation or Empirical Documentation

Refer to Element 7: Prescription, *in the Interagency Prescribed Fire Planning and Implementation Procedures Guide*, PMS 484, to fill out this appendix.

| Weather and Fuels | | | | | | | | | | |
|----------------------------------|--|--|--|--|------|--|--|--|--|--|
| OBSERVATION TIME (24 HR) | | | | | | | | | | |
| SLOPE (%) | | | | | | | | | | |
| ASPECT | | | | | | | | | | |
| ELEVATION (FEET) | | | | | | | | | | |
| FUEL MODEL (1-13) | | | | | | | | | | |
| SHADING (<50% or >50%) | | | | | | | | | | |
| DRY BULB TEMPERATURE (°F) | | | | | | | | | | |
| WET BULB TEMPERATURE (°F) | | | | | | | | | | |
| RELATIVE HUMIDITY (%) | | | | | | | | | | |
| EYE LEVEL WIND SPEED (MPH) | | | | | | | | | | |
| WIND DIRECTION | | | | | | | | | | |
| CLOUD COVER (%) | | | | | | | | | | |
| 1-HR FUEL MOISTURE (%) | | | | | | | | | | |
| | | | | | | | | | | |
| Fire Behavior | | | | | | | | | | |
| FIRE (HEAD, FLANK, BACKING) | | | | | | | | | | |
| AVERAGE FLAME LENGTH (FT) | | | | | | | | | | |
| MAX. FLAME LENGTH (FT) | | | | | | | | | | |
| RATE OF SPREAD (CH/HR) | | | | | | | | | | |
| TORCHING/CROWNING (Y or N) | | | | | | | | | | |
| FIRE WHIRLS (Y or N) | | | | | | | | | | |
| SPOTTING (Y or N) | | | | | | | | | | |
| SMOKE DIRECTION | | | | | | | | | | |
| SMOKE RISE | | | | | | | | | | |
| | | | | | | | | | | |
| Notes | | | | | | | | | | |
| | | | | | | | | | | |
| OBSERVER NAME: | | | | | DATE | | | | | |

| APPENDIX G - PRESCRIBED FIRE POST BURN EVALUATION | | | | | | | | | | |
|--|--------|---------------------------|----------|----------------|-----------------------------|-----------|------------------|--------------------------|---|----------------|
| Burn Unit | | Date(s) Burned | | | Acres Burned | | | Ignition Start Time | | |
| | | | | | | | | | | |
| Weather and Fuel Conditions | | | | | | | | | | |
| | | Time of Ignition Low High | | | | | | ɔh | | |
| T | | 111110 01 | 19111101 | _ | | 2011 | | | 333 | , |
| Temperature | | | | | | | | | | |
| Relative Humidity | | | | | | | | | | |
| 1-hr Fuel Moisture | | | | | | | | | | |
| 10-hr Fuel Moisture | | 100-hr Fuel Moisture | | | | | | | Days Since Significant Precipitation | |
| Wind Direction (Average) | | Wind Speed (Average) | | | Percent of Fuel Consumed | | | Ignition Duration (min.) | | |
| | | | | | | | | | | |
| | A | ccompl | lishmei | nt o | f Fuel | s Treatm | ent O | bjectives | S | |
| Overall Objectives Achieved: | | • | Yes | | | No | | | | |
| Short Term Results (include changes in fuel profile and fire regime condition class) | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | Co | ot Eve | luation | | | | |
| Burn Plan | Sito | Prepara | tion | | | | Burn Cos | ete | Cost/Acre | |
| Preparation Preparation | Site | Ттерага | uon | Burn Operation | | auon | on Total Burn Co | | COSUACIE | |
| \$ | \$ | | | \$ | | \$ | | | | \$ |
| | Na | arrative | – Pres | cril | bed Fi | re Burn l | Boss (| Commen | ts | |
| i.e. operations, safety | , fire | behavior | , person | nel (| & equip | ment perf | ormano | e, logistic | s, sm | oke management |
| | | | | | | | | | | |
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| Daniel IE | | | | | | | | 1 | | |
| Prescribed Fire Burn Boss | 1 | | | | | | | Date | | |
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The *Prescribed Fire Plan* is developed and maintained by the Fire Use Subcommittee, under the direction of the Fuels Management Committee, an entity of the National Wildfire Coordinating Group (NWCG).

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